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Cabinet for Health and Family Services

Mapping the Future of e-Health in Kentucky

Mapping the Future of e-Health In Kentucky:

**The Annual Report
of the Kentucky e-Health Network Board
and the Kentucky Healthcare Infrastructure Authority**

**To the
Governor,
the General Assembly,
the Cabinet for Health and Family Services and
the Department of Commercialization and Innovation**

October 2006

**Prepared by
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Dear Friend and Colleague:

We have made considerable advances toward improving health and health care and continue to address the tremendous challenges that face Kentucky. After several years, we finally are making progress toward reigning in Medicaid, private health insurance and state employee health care costs, but costs remain high. Kentuckians face high rates of chronic diseases, and we still face considerable challenges in the provision of quality health care.

We must address the health care cost, quality, and outcome issues for Kentucky to thrive. In all other areas of our economy, technology has transformed the way America does business, making it more productive and efficient. It is time for technology to do the same for health care.

That is why the work of the Kentucky e-Health Network Board is so important. This group of individuals is committed to working with every partner inside, and outside the state, to advance the vision of Kentucky's landmark e-Health legislation, SB2, to lower costs, increase quality and improve health outcomes.

I extend my thanks to all members of the e-Health Network Board for their dedication and service to the Commonwealth. Representing a diverse mix of Kentucky leaders from the public and private sectors, they have accomplished much in the year since I appointed them to the Board. My special gratitude goes out to the e-Health Board chairs, Dr. Carol Steltenkamp, Dr. Larry Cook and Dr. Bob Esterhay. They provided leadership to the Board and volunteered countless hours to ensure appropriate management and coordination of Board projects and activities.

I also thank members of the General Assembly who serve on the e-Health Network Board - Senator Richard Roeding, Senator Daniel Mongiardo, Representative Stephen Nunn and Representative Tommy Thompson. Finally, I want to recognize Secretary Mark D. Birdwhistell and staff from the Cabinet for Health and Family Services for their hard work and support.

The faithful service of all of these individuals is moving Kentucky down the right path toward lower cost, higher quality health care. I look forward to working with them in the coming months to continue the momentum toward developing secure, interoperable electronic health information exchange in Kentucky.

Sincerely,

Ernie Fletcher
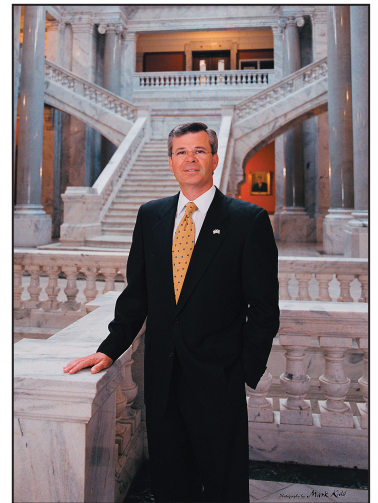
Dear Kentucky Official and Friend of e-Health:

The Commonwealth of Kentucky has been plagued by skyrocketing health care costs in the Medicaid program, state employee health plan and the private insurance market. These rising costs are sapping the public and private sector budgets and forcing dramatic steps to control runaway health care spending. In addition, there is growing concern that our health care system does not consistently deliver high quality care. Some studies indicate that health care meets accepted standards of quality only about 50 percent of the time. There are no easy solutions to the cost and quality problems in health care, but one area that holds great promise is e-Health, the use of information technology to improve health and health care.

Recognizing the promise of e-Health, the Legislature passed and Governor Fletcher signed Senate Bill 2 on March 8, 2005. SB2 authorized the creation of the Kentucky e-Health Network (KEHN) Board and the Healthcare Infrastructure Authority, a unique collaboration between the University of Louisville and the University of Kentucky. The Governor and the General Assembly charged the Board with the ambitious goal of developing and implementing a secure, interoperable statewide electronic health network to improve the quality and efficiency of Kentucky's health care system.

When Governor Fletcher appointed the Board, he called on the Cabinet for Health and Family Services (CHFS) to work alongside the Board to help Kentucky move forward in the e-Health arena. CHFS leadership and staff have worked in conjunction with KEHN Board to bring together a range of stakeholders, assess opportunities and initiate strategic e-Health projects that promote health IT adoption and the development of health information exchange in the Commonwealth in Kentucky.

We are pleased to submit for your review the 2006 Annual Report for the Kentucky e-Health Network Board, as required by KRS 216. 261(4) and 261.267(2)(y). We believe that e-Health has great value for Kentucky, and we are making steady progress toward a future where health information technology is routinely used and electronic health information can be exchanged securely. This report summarizes CHFS and KEHN Board accomplishments and provides recommendations on how we can work together.

Please distribute this document to members of your constituency that you think should see this information. Physicians, hospital administrators, pharmacists, insurers, and other stakeholders in the health care industry across the Commonwealth will benefit from staying abreast of the progress we are making regarding e-Health.

We ask for your continued support as we work to improve the quality and efficiency of health care as well as the lives of all Kentuckians through e-Health.

Sincerely,

Carol Steltenkamp, M.D., M.B.A.   Larry Cook, M.D.
University of Kentucky   University of Louisville
Co-Chair   Co-Chair
Kentucky e-Health Network Board   Kentucky e-Health Network Board

Executive Summary

e-Health is widely regarded among health analysts and policy makers as critical to increasing the efficiency and effectiveness of America's health care sector. e-Health consists of two parts: the adoption of health information technology (HIT), such as electronic medical records in clinical settings, and health information exchange (HIE), the ability to exchange health information electronically between two entities when appropriate.

In 2005, the Kentucky General Assembly passed and Governor Ernie Fletcher signed Senate Bill 2, which authorized the establishment of a statewide e-Health network. The Kentucky e-Health Network Board was created in the legislation and charged with overseeing the development of a statewide, interoperable e-Health network to improve health care quality and efficiency through health information technology adoption and data exchange.

Kentucky's e-Health Network Board operates under the leadership of the University of Kentucky and the University of Louisville in conjunction with the Cabinet for Health and Family Services. The Kentucky e-Health Network Board held its first meeting on November 7, 2005. Governor Ernie Fletcher met with the Board, described his vision for e-Health, and gave the Board its charge.

This Annual Report presents the research and findings of the Kentucky e-Health Network Board, the Cabinet for Health and Family Services, and the Kentucky Healthcare Infrastructure Authority regarding e-Health efforts at the national level and in other states and the implications of these efforts on e-Health in Kentucky. This report also provides an in-depth look at the accomplishments of the Kentucky e-Health Network Board to date and its vision and recommendations for advancing e-Health in the Commonwealth of Kentucky.

Board Assessment

Cabinet staff and the KEHN Board leadership performed extensive research and interviewed key thought leaders in e-Health at the state and national levels to determine lessons learned, best practices and strategic opportunities for Kentucky based on other state and community health information exchange efforts. Some of the key findings included:

- Other states have similar approaches to Kentucky in terms of the origins and structure of their e-Health efforts, with state government in some cases playing a lead role through legislation or executive order (e.g., Minnesota, Arizona); some statewide efforts being governed mostly by private sector stakeholders (e.g., Indiana, Colorado); or others being a mix of both public and private sector leadership (e.g., Tennessee and Florida).
- Incremental, short-term projects are critical for new e-Health efforts to engage major stakeholders and build trust and momentum as the initiative builds toward expanded functionality.
- Funding for most e-Health projects around the country has relied heavily on external sources, but the availability of external funds is waning even as competition grows.
- State efforts should pay close attention to federal e-health efforts and complement federal activities, especially the recommendations for the National Health Information Network, new data and security standards and HIT certification.
- Initial e-health Board efforts should focus on some statewide health information exchange rather than exclusively supporting local HIT adoption in order to stretch limited resources.
- Kentucky can leverage information already available in electronic format, such as using prescription drug or claims data, to build toward more robust health information exchange.

Board Accomplishments

Based on the KEHN Board's initial assessment, the Board has undertaken several critical breakthrough projects and long-term planning necessary for the development of e-Health in Kentucky, including the following:

- **Kentucky Health Information Partnership** (K-HIP) is a project facilitated by the Cabinet for Health and Family Services to bring together major health care organizations in Kentucky to develop a common web portal for provider-payor communications. The portal will contain a clinical site for accessing a patient health summary based on claims data and an administrative site for handling common administrative transactions electronically. Through this portal, health care providers would have secure access to clinical information on more than 60 percent of the patients they see and administrative tasks would be simplified and standardized.
- The **e-Prescribing Partnerships in Kentucky** (ePPIK) Grant Program is a new grant program that will assist with adoption of health information technology to advance the e-Prescribing in the Commonwealth. Offered by the Cabinet for Health and Family Services in partnership with the Kentucky e-Health Network Board and the Governor's Office for Local Development, the ePPIK Grant program will promote the formation of partnerships within a community between physician's offices, hospitals, pharmacies and other health care entities to facilitate true end-to-end electronic prescription processing. A total of $300,000 in funding for the ePPIK grant program comes from the Foundation for a Healthy Kentucky and the Hal Roger's Grant Program that supports the Kentucky All Schedule Prescription Electronic Reporting (eKASPER), the nation's premier program to monitor prescription drug abuse of controlled substances.
- **The Health Information Security and Privacy Collaboration** is a federally-funded collaboration to assess how privacy and security practices and policies affect health information exchange (HIE). Kentucky is one of 33 states participating in the project. There are multiple working groups established for the project that are identifying and addressing business practice and legal barriers to HIE. The Cabinet for Health and Family Services serves as the project manager and is partnering with the University of Louisville and the University of Kentucky on this project.
- The Kentucky e-Health Network Board plans to host a **statewide e-Health Summit** in January 2007 as a means to bring together payors, providers, policy makers, consumers and other interested stakeholders to learn about and discuss the development of e-Health in Kentucky.
- The **e-Health Advisory Group**, a group of technical and clinical experts in e-Health, have been appointed and are charged with advising the Kentucky e-Health Network Board regarding the development of a statewide e-Health network and developing an action plan for implementing e-health in Kentucky.

Board Recommendations

While the KEHN Board has made critical progress in the last year, the Board faces a number of important challenges. As Kentucky looks to transform health care through e-Health, the Board forwards the following recommendations to Kentucky's political leadership, the health care community, the business sector and the public at large to ensure that progress continues. The Board recommends three strategic areas for action:

- **Foster an electronic culture in Kentucky's health sector through**:
  - The deployment of a statewide e-Health inventory and needs assessment to gather baseline data for making informed decisions regarding e-Health.
  - The development of tools and technical assistance targeted to overcoming challenges to technology adoption and information exchange.
  - Changes to the incentive structure of health care to reward those providers that invest in HIT and HIE.
- **Develop a dual e-Health expansion strategy by pursuing at the state level:**
  - a core statewide HIE infrastructure.
  - a support and coordination structure for local HIT and HIE efforts.
- **Invest in a higher quality, lower cost health sector through significant public and private resources for e-Health.**

Introduction

The American health care system lags behind nearly every other sector of the national economy in its adoption of information technology. In an era characterized by instantaneous mobile communications, unprecedented access to information through the Internet, and a booming virtual marketplace, most American clinicians still rely on handwritten notes, paper prescriptions, and incomplete patient histories stored in file cabinets. Even though patients and physicians benefit from extremely sophisticated diagnostic technology, the relatively basic information technology necessary to store and share critical health information electronically remains largely unavailable.

Foreword by Governor Ernie Fletcher

This technology gap persists in spite of ample evidence that the adoption of health information technology and health information exchange, known collectively as "e-health," could significantly improve quality, efficiency, safety, and access in health care. Chronic conditions could be managed more effectively if physicians had access to a complete, longitudinal health record; evidence-based clinical and diagnostic tools; and patient tracking and electronic reminder systems. Duplicate and unnecessary tests, images and prescriptions could be dramatically reduced if physicians had immediate access to more complete clinical information about each patient they treated, especially during emergency room visits.

Billions could be saved by replacing inefficient paperwork with electronic transactions and record-keeping. Electronic prescribing could drastically reduce the transcription errors and adverse drug interactions that each year kill thousands. And an interconnected system of health care information could help overcome the barriers of distance and resources that stand between rural, underserved health care markets and their more advanced urban counterparts. With strong leadership and strategic efforts, each of these goals is achievable in the near future.

Two fundamental changes must occur before Americans reap the benefits of e-health. First, health information must be recorded and stored electronically, rather than on paper. Next,

an interoperable network based on common technological and clinical standards must exist to allow for the secure and timely availability of health information at the point of care.

Though progress has been made on each of these fronts, it is thus far limited in scope and penetration. Only 25 percent of American physicians and 20-25 percent of hospitals utilize an electronic health record (EHR) in their practice.[1] Only 5-18 percent of physicians and clinicians engage in electronic prescribing.[2] Moreover, such survey and research data on EHR adoption varies according to how strictly or loosely adoption is defined.[3] One study conducted by the University of Kentucky found that 21 percent of primary care practices surveyed used an electronic health record.[4]

Real electronic exchange of health information is even less developed, with only a handful of systems or regions actively engaged in the transfer of patient-specific data. In a study done by the Kentucky Medical Association, for example, only 59 percent of physician practices with electronic medical records systems have the connectivity to communicate prescriptions to a pharmacy electronically.[5]

Kentucky is fortunate, though, to have examples of well-developed health information exchange within its own borders and in close proximity. Notable examples of health information exchange efforts include the Veterans Health Administration, HealthBridge in the Greater Cincinnati area, the Kentucky Department of Corrections electronic medical record system, and the Indiana Network for

[1] K. Fonkych and R. Taylor, *The State and Pattern of Health Information Technology Adoption* (Santa Monica, Calif.: RAND, 2005).
[2] eHealth Initiative, ***Electronic Prescribing: Toward Maximum Value and Rapid Adoption***, April 14, 2006, Washington, DC, available at http://ehr.medigent.com/assets/collaborate/2004/04/14/eHealth%20Initiative%20Electronic%20Prescribing%20Report%2004.14.04%20Executive%20Summary.pdf (accessed on October 16, 2006).
[3] Ashish K. Jha, et al. "How Common Are Electronic Health Records In The United States? A Summary Of The Evidence," *Health Affairs*, October 11, 2006, Web Exclusive available at http://content.healthaffairs.org/cgi/content/abstract/hlthaff.25.w496v1 (accessed on October 16, 2006).
[4] J.E. Andrews, et al., "Current State of Information Technology Use in a U.S. Primary Care Practice-Based Research Network," Informatics in Primary Care, Vol. 12, No. 1, 2004, 11-18.
[5] Kentucky Medical Association, **"Report On The Use Of Electronic Medical Records By Kentucky Physicians,"** 2005.

Patient Care in Indianapolis.

A number of barriers impede further progress and implementation of HIT and electronic health information exchange, including:

- legal barriers (federal Stark law physician referral and anti-kickback provisions),
- financial barriers (the high cost of HIT systems, as well as the misalignment of cost burdens and benefits that characterize today's health care financing and reimbursement system),
- the absence of widely-accepted clinical and technological standards, and
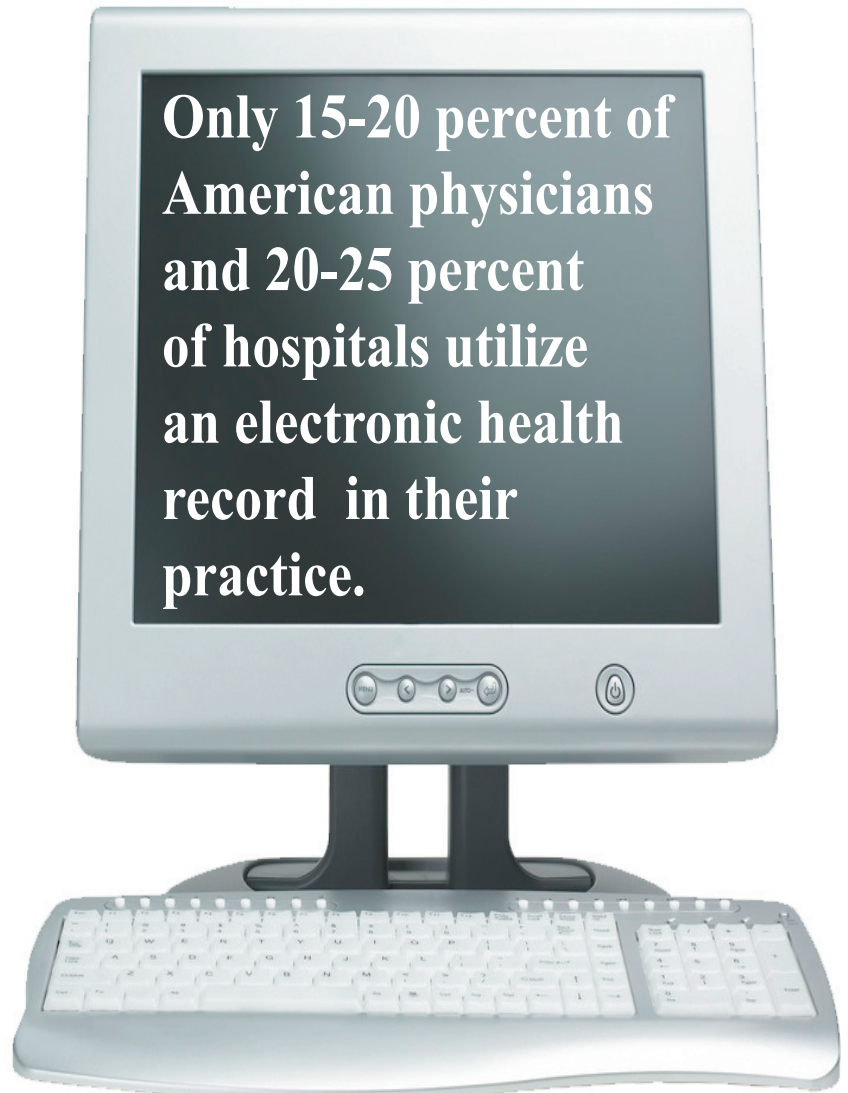- privacy and security concerns, just to name a few of the major challenges.

Seeing the tremendous potential for cost savings and improvement in the quality of care, many states, communities and the federal government are pursuing efforts to increase adoption of HIT and promote the exchange of health information among health entities, despite the barriers and challenges.

In Kentucky, the passage of SB2 in 2005 ignited interest and established the structures for furthering e-Health. This legislation created the Kentucky e-Health Network (KEHN) Board to oversee e-Health efforts in the state. It also established the Healthcare Infrastructure Authority, a partnership of Kentucky's two major research universities – the University of Kentucky (UK) and the University of Louisville (U of L) – to provide leadership for the Board. The Cabinet for Health and Family Services at the urging of Governor Fletcher has taken a leading role in fostering e-Health in the state by providing staff support to the Board and working with the leadership of chairs from UK and U of L. The Board together with the Cabinet has undertaken to survey the national and local landscape in e-Health, assess the critical opportunities in Kentucky related to e-Health and develop short-term and long-term plans for achieving the vision of SB2.

This Annual Report will present the research and findings of Cabinet staff and the Board members

regarding the state of e-Health in Kentucky and the critical opportunities and challenges that lie ahead for the Commonwealth. This report will provide:

- an overview of e-Health efforts at the national level,
- a brief history of e-Health efforts in Kentucky
- background on key e-Health efforts in other states.

Only 15-20 percent of American physicians and 20-25 percent of hospitals utilize an electronic health record in their practice.

The final section will look at the accomplishments of the Kentucky e-Health Network Board to date, including:

- the Board's assessment of the lessons learned from other national and state efforts,

- accomplishments and key e-Health initiatives underway in Kentucky, and

- recommendations for the Governor, the Legislature, public health and health care leaders and the people of Kentucky for advancing e-Health in the Commonwealth.

What is e-Health?

e-Health is a broad term
that encompasses any effort to use
information technology in the areas of
health and health care. Notable examples of
e-Health include a consumer using the Internet to
locate health information, a clinician using an electronic
medical record in a health care setting, or two health care
entities exchanging health information using a secure web site
or network. e-Health specifically encompasses two major
concepts: health information technology (HIT) and health
information exchange (HIE). Health IT refers to the
adoption and use of information technology in a health
setting. Health information exchange involves
transferring electronic health information from one
entity to another, usually the ability to transfer
a person's medical record electronically
from one place to another
securely.

National e-Health Outlook

At the core of the e-health question is a paradox characteristic of the entire U.S. health care system. By and large, health care is delivered locally but governed by state and federal laws and regulations. Most Americans typically access care almost exclusively within a specific geographic region, where their health information will be generated, stored, and accessed. This pattern suggests a regionalized e-health structure, which would limit the number of interconnected stakeholders, the opportunities for security and privacy breaches, and the amount of health data to be stored and managed in a particular location.

On the other hand, the U.S. health care system is increasingly characterized by federal regulations and national companies. If national organizations such as the Centers for Medicare and Medicaid Services, GE Healthcare, or Kaiser Permanente were forced to adjust their systems and products to unique e-health regimes in each local market, inefficiencies would multiply and adoption would slow. The challenge facing U.S. health care leaders is to strike the proper balance between local autonomy, state coordination and national standardization.

The Bush administration clearly has made e-health a major priority, raising its profile to an issue of national prominence and urgency. In his 2004 State of the Union address, President Bush highlighted the benefits of adopting electronic health records. On April 27, 2004, he called for most Americans to have an EHR by 2014. That same day, he established the position of National Coordinator for Health Information Technology and called for a 10-year strategy for transforming the delivery of health care through the adoption of EHRs and the creation of a National Health Information Network (NHIN) to connect those records. This strategy, developed and pursued by Office of the National Coordinator for HIT (ONC) within the U.S. Department of Health and Human Services (HHS), recognizes the dual-track nature of e-health by focusing on HIT (primarily through increased EHR adoption) as well as the standards and connectivity necessary to link records and clinicians (the NHIN).

Federal action over the past two years reflects an outlook that recognizes differences and encourages innovation at the local level, while pursuing national standards and solutions for industry-wide challenges. Although still very much under development, the federal strategy for e-health appears to be built around:

- Private sector responsibility for IT investment, with limited federal grant opportunities;
- Local- or state-led health information exchange efforts, commonly referred to as local health information organizations (RHIOs), and
- Federal leadership in software certification, standards development, and the interoperability and interconnectivity of HIT, HIE and RHIOs.

From this plan, it is clear that the federal government recognizes its limits and the imprudence of creating a grand centralized scheme, and has instead opted for transformative change through partnerships and innovation at the local and state level. With many responsibilities largely left to states, local entities, and private and independent health care stakeholders, the federal government can be much more effective in developing solutions and standards for nationwide or industry-wide challenges, in which different local approaches could hinder connectivity or investment. This distinction is borne out by the focus of HHS's primary initiatives:

- *Software certification*: The Certification Commission for Health Information Technology (CCHIT) was created to assess and validate HIT products for functionality, interoperability, and security standards. On July 18, 2006, it released the first ambulatory EHR product certifications. The federal government plans to adopt policies that encourage the use of only CCHIT-certified IT products. This is the centerpiece of an effort to create a national HIT marketplace in which clinicians can shop for products with greater confidence as to their quality and conformity with national standards.

- *Standards development*: The Health Information Technology Standards Panel (HITSP) is a public and private sector partnership created to develop relevant and widely-accepted standards to facilitate interoperability among HIT software products. These standards, which will address security, privacy, and specific clinical use cases, are integral to the development of an effective national network. HITSP issued its first set of standards recommendations on June 30, 2006.

- *National Health Information Network (NHIN)*: ONC issued four contracts to groups of health care and HIT organizations to develop prototypes for the architecture of the nation's health information infrastructure. Each consortium was charged with electronically linking three health care markets or RHIOs for the secure exchange of patient-specific health information between physicians, hospitals, pharmacies, and laboratories. The lessons learned during the construction of these prototypes will be used to develop the permanent architecture and guidelines for a network that will connect the health information exchange efforts of different regions across the nation. The four contracts were awarded November 10, 2005. Five sites in eastern Kentucky and Lexington, including public health, university, and private sector health care entities, comprise one of the three health care markets in the Accenture consortium.

Stark and Anti-kickback Safe Harbors

For the past three years Congress has attempted to pass HIT legislation. While various bills have addressed different aspects of the issue, a central theme has remained the need to counteract federal laws that currently impede HIT investment, specifically the Stark referral and anti-kickback statutes.

Despite the lack of consensus in Congress, HHS moved forward with new regulations on August 8, 2006, that create parallel safe harbors to the Anti-kickback Statute (AKS) and the Stark law. The safe harbors created by the Office of Inspector General of HHS (AKS) and by the Centers for Medicare and Medicaid Services (Stark) take effect October 10, 2006. Read together, these regulations will enable entities such as hospitals to make donations of HIT to physicians and other health care providers. Though donation of hardware is largely prohibited, other forms of HIT that pertain to e-Prescribing and Electronic Health Records (EHR) can be donated. Wording in the regulations allow donations for e-Prescribing only to be used for the purpose of e-Prescribing. This means that the more broadly-worded regulation for EHRs is likely to be more important, because under the regulation in order to qualify for the safe harbor e-Prescribing capability must be a part of a EHR software donation.

In order to comply with the express will of Congress articulated in the AKS and Stark law, interoperability is a requirement of any EHR software donation, to ensure that the recipient of the donation is not tied solely to the donor. As interoperability has largely not yet been achieved due to a lack of consistent standards for HIE this may slow the effectiveness of the new safe harbors. However, there are significant efforts underway at the federal level to develop these standards, and it is hoped that these regulations will accelerate that process.

The Federal Transparency Initiative

On August 22, 2006, President Bush signed an Executive Order on Health Care Transparency focused on transforming federal health care purchasing. The executive order called on the federal government to provide better information for consumers on the price and quality of health care, to establish and utilize standards for quality and health information technology in its health care purchasing decisions, and to use incentives to reward the delivery of higher quality, lower cost health care. The President and HHS Secretary Leavitt furthermore called on states and the nation's other large employers to follow suit by adopting these same standards and policies. Governor Fletcher, along with seven other governors, issued statements in support of the President's executive order in the weeks following the announcement. Other states and leading employers are expected to join the federal Transparency efforts.

Other States' Experiences with e-Health

With the passage of SB2, Kentucky became recognized as an early leader in statewide e-health efforts. Although an early innovator, Kentucky is not alone and the experiences and progress witnessed in other states can serve as useful teaching points as the Commonwealth's efforts mature and progress. To learn from other states and localities efforts, staff for the Cabinet for Health and Family Services interviewed more than a dozen state leaders and national experts. A handful of the most pertinent state e-Health initiatives are summarized here. Additional information on other states efforts are provided in Appendix E.

Arizona

In August 2005, Governor Janet Napolitano signed an executive order establishing the Arizona Health-e Connection, a public-private effort with the goal of creating a statewide Health Information Technology (HIT) network. A statewide summit was held in November 2005, at which time a steering committee was named.

The governor charged the group of assembled leaders to develop a roadmap for Arizona in 180 days. The following April, the steering committee released a roadmap for the development of a statewide network, featuring four priority projects that represent incremental steps toward the creation of that network:

- Creation of a common web portal to provide access to health information
- Development of standards for the compilation of a patient health history, which will include a pharmaceutical history, diagnoses, laboratory tests, etc.
- Initiation of a regional clinical messaging system
- Funding of a grant program to encourage small and rural providers to adopt EHRs.

When considering the initial projects to recommend, the steering committee was guided by the principles of urgency (the need for IT-related relief in a particular aspect of the health care system) and feasibility (an initiative's likelihood for success). The Arizona legislature recently approved Gov. Napolitano's request for $1.5 million in e-health funding.

Florida

In March 2004, Governor Jeb Bush used an executive order to establish the Governor's Health Information Infrastructure Advisory Board. This panel has both public and private sector representation and advises the administration on e-health. The Board has laid out a two-pronged approach for the state, focusing on EHR adoption and the development of a web-based statewide health information interchange, known as the Florida Health Information Network (FHIN).

In addition to its education and incentive efforts intended to spur EHR adoption, the state government is actively involved in the development of the FHIN. Florida is offering assistance and financial incentives ($1.5 million total in 2005) to regions to facilitate the launch of RHIOs across the state. It is also working to devise the technical specifications and standards necessary to develop a central statewide interchange. Patients' health information will be stored electronically by their providers. When a clinician needs a complete health record at the point of care, the statewide interchange will use a master patient index and a centralized health records locator to retrieve any appropriate records from the various RHIOs and compile a comprehensive record for delivery to the clinician. FHIN will serve as the technical connection between different RHIOs.

A third Florida initiative, known as Availity, was launched in 2002 by Humana and Blue Cross Blue Shield of Florida. Availity is a web-based multipayor portal that offers provider offices the ability to conduct standard HIPAA administrative transactions through a single, secure website. This administrative

functionality has been available since 2002 and is currently used by all 208 Florida hospitals and over 90 percent of the state's physicians. The next phase of Availity is a payor-based health record, which will be available to providers at the point of care through the same website. It is currently being piloted in the Tampa region.

Indiana

Although not operational statewide, Indiana's e-Health ventures have gained national recognition for their accomplishments and success. Clinical leaders in the Indianapolis area recognized early on that HIT could save money and improve care. The Indianapolis Network for Patient Care (INPC) was established in 1993 as a shared database that contained health information, including emergency room encounter records, hospital abstracts, and clinical laboratory data.

Emergency room doctors could access the database and have a summary of a patient's clinical information from various sources. The INPC represented a major step forward in health information exchange, but its effectiveness was limited by its scope; it only included the indigent population being served by providers of last resort.

Private sector health plans and hospitals nevertheless recognized the success of the INPC and sought to create a similar database for all patients. In February 2004, the Indiana Health Information Exchange (IHIE) was created to serve the five major hospital systems in Indianapolis. The Indiana Health Information Exchange (IHIE) is unique because it developed with little involvement from state government. IHIE is a self-supporting, stakeholder-governed entity that is cash-positive in 2006. It currently serves the Central Indiana region, and plans exist to extend the network across the state in the future.

A major focus of Indiana's HIT efforts is the facilitation of physician access to relevant clinical data at the point of care. HL7 standards are used for most clinical messaging and ensure end users understand the clinical data supplied to them. The Docs4Docs clinical messaging system, a secure web portal, allows physicians to receive results over the Internet. Over 3000 central Indiana doctors use the system currently.

Tennessee

Tennessee is an example of a state where the existence of multiple, well-established RHIOs lead to the governor to convene a statewide coordinating structure. On June 1, 2006, the Governor appointed a 16-member Tennessee e-Health Advisory Council. In addition to the Governor's e-Health Council, Tennessee has pursued a portfolio of programs in the last few years that have made it a national leader in e-Health. One promising statewide project is the establishment of a claims- based electronic health record for TennCare, Tennessee's Medicaid program. Using electronic claims data and adding lab results and other electronic data sources, TennCare was able to build clinical health summary for all of its enrollees in about a year. Now, SharedHealth and Blue Cross Blue Shield of Tennessee are expanding the availability of this service to the commercial insurance market.

In addition to the statewide efforts, three RHIOs in Tennessee offer different but complementary approaches to e-Health at the local level. CareSpark, operating in the Eastern portion of the state in the Tri-cities Area, is a community health information exchange effort with an emphasis on clinical decision support. It is also participating in the Accenture contract to build a prototype for the National Health Information Network in the Appalachian region. Southeastern Kentucky providers as well as others from West Virginia and Virginia are participating in this effort. MidSouth eHealth Alliance in the Memphis area is working with Vanderbilt University and the state to develop electronic medical records data-sharing model. Out of Knoxville, Innovative Valley Health Information Network (IVHIN) is looking to link data from four hospitals in the area.

e-Health in Kentucky: History and Process

As early as 2001, legislators in the Kentucky General Assembly initiated talks about the future of e-health in the Commonwealth. Discussions among provider representatives, payors, legislators, and other stakeholders did not come to fruition until 2005.

During the short-session of the General Assembly in 2005, Senate President David Williams and Sen. Dan Mongiardo cosponsored legislation, known as Senate Bill 2, which called for the creation of a secure, interoperable statewide electronic health network. Senate supporters worked in conjunction with Governor Fletcher's Administration including then-Secretary James Holsinger of the Cabinet for Health and Family Services as well as Rep. Steve Nunn, an early advocate for e-health who shepherded the bill through the House. The SB2 bill passed both chambers without objection. On March 8, 2005, Governor Fletcher signed SB2 into law. See Appendix B for the full text of Kentucky's e-Health Network legislation. Senate Bill 2 mandated that Kentucky develop the Kentucky e-Health Network, which would support or encourage several types of transactions or activities to be phased in over time.

Potential e-Health Transactions or Activities envisioned in SB2

(a) Automatic drug-drug interaction and allergy alerts;
(b) Automatic preventive medicine alerts;
(c) Electronic access to the results of laboratory, x-ray, or other diagnostic examinations;
(d) Disease management;
(e) Disease surveillance and reporting;
(f) Educational offerings for health care providers;
(g) Health alert system and other applications related to homeland security;
(h) Links to drug formularies and cost information;
(i) Links to evidence-based medical practice;
(j) Links to patient educational materials;
(k) Medical record information transfer to other providers with the patient's consent;
(l) Physician order entry;
(m) Prescription drug tracking;
(n) Registries for vital statistics, cancer, case management, immunizations, and other public health registries;
(o) Secured electronic consultations between providers and patients;
(p) A single-source insurance credentialing system for health care providers; and
(q) The following transactions covered by HIPAA:

1. Electronic health care claims submission;
2. Electronic payment;
3. Coordination of benefits;
4. Health care claim status;
5. Enrollment and disenrollment in a health plan;
6. Eligibility for a health plan;
7. Health plan premium payments;
8. Referral certification and authorization;
9. First report of injury; and
10. Health claims attachments.

Clearly, the goals established for the Kentucky e-Health Network are ambitious. The legislators understood the evolving nature of this field, however, as evidenced by the decision not to attach a deadline for the full implementation of the Network. To accomplish these goals, the legislation established the Kentucky e-Health Network Board, composed of 22 leaders from academia, government, the General Assembly, and the private sector, with representation from most major sectors of Kentucky's health care and public health systems.

The Board is charged with the implementation and oversight of the operation of an electronic health network for the Commonwealth. To this end, the Board is responsible for reviewing and making recommendations regarding various models and strategies for a statewide network, intermediate projects, and other policies and issues necessary to the achievement of the goals of Senate Bill 2.

The legislation also created the Kentucky Healthcare Infrastructure Authority, a partnership between the University of Kentucky and the University of Louisville. The Authority is charged with improving the cost and quality of health care in the Commonwealth through research, recommendations, education, pilot projects, grant initiatives, and support of the Board's efforts.

Kentucky e-Health Network Board Progress: Assessment, Accomplishment, Vision and Recommendations

Since the passage of e-Health legislation in 2005, the Kentucky e-Health Network Board has led efforts to make recommendations, set policies, and initiate projects that promote the development of the Kentucky e-Health Network and the adoption of health IT in the Commonwealth.

The Kentucky e-Health Network Board held its first meeting on November 7, 2005. Governor Ernie Fletcher met with the Board, described his vision of what this Board could accomplish, and gave the Board its charge. Early meetings were primarily devoted to education about the state of e-health nationally and in Kentucky, development of a common understanding of the role and responsibilities of the Board, and general administrative responsibilities. Presenters for the Board over the past year have included:

- Dr. David Brailer, National Coordinator for Health IT, presented the federal e-health outlook to the Board at its meeting on January 24, 2006

- Dr. William Yasnof, National Health Information Infrastructure Advisors, and former senior advisor on health IT at HHS, presented on national and state models for health information exchange including the e-Health Trust model,

- Keith Hepp, HealthBridge, presented on this RHIO operating in the Greater Cincinnati and Northern Kentucky region,

- Claudine Beron, Accenture, presented on the involvement of Eastern Kentucky health care organizations in the National Health Information Network prototype contract,

- Dr. Charles Saffron, Harvard University professor and e-health consultant, presented on the experience of Massachusetts with e-health collaboratives,

- Lorna Jones, CIO, CHFS, presented on internal IT improvements at CHFS, and

- Dave Sallengs, eKASPER Branch Manager, Office of Inspector General at CHFS, presented on the role of eKASPER in controlling prescription drug abuse.

Early administrative tasks and deliverables accomplished by the KEHN Board included,

- discussion and adoption of Board bylaws,

- development of a mission and vision statement (see Appendix C for a copy), and

- development of a work plan for 2006.

The Board has also initiated a number of short-term breakthrough projects and began long-term planning to make progress toward the goal of a secure, interoperable, statewide electronic health network. Two of the projects – one a federally funded privacy and security project and another a grant program to enhance e-Prescribing – leverage funding external to the Board and the Cabinet. These projects are examples of how legislation and existence of the Board is enhancing opportunities for Kentucky that may not have existed previously.

In addition, the Board seated a 12 member e-Health Advisory Group, a group of information technology experts and clinicians, to assist it with planning for the long-term structure of the Kentucky e-Health Network Board. Further description of the breakthrough projects and the advisory group are provided below.

One of the most important accomplishments during the Board's first six months was a comprehensive e-Health assessment performed by staff and leadership, the results of which were presented at the April 2006 Board meeting.

Assessing the Current e-Health Environment

The level of interest in e-Health has risen dramatically across the United States in recent years. Some states and localities have efforts that are relatively mature in comparison to Kentucky's e-Health efforts, while many others began more recently. Despite their differing time frames, significant commonalities are evident among all of the states that have active e-Health initiatives. Cabinet staff and the KEHN Board leadership performed extensive research and interviewed key thought leaders in e-Health at the state and national levels to determine lessons learned, best practices and strategic opportunities for Kentucky based on other state and community health information exchange efforts.

External Factors

Among the commonalities, most state e-Health initiatives have one or more boards or panels of experts and/or stakeholders that provide advice and some level of oversight. Board or advisory group members are typically drawn from stakeholders throughout the private sector, as well as public sector agencies involved in the provision or financing of health care and public health. Successful statewide initiatives have been driven by both state governments through legislation or executive order (e.g., Minnesota, Arizona), mostly private sector stakeholders (e.g., Indiana, Colorado), or a mix of both public and private sector leadership (e.g., Tennessee and Florida).

While a few areas have ambitiously begun work on comprehensive health IT and health information exchange plans, one universal refrain from research and interviews performed was the need for incremental, short-term projects. Incremental projects demonstrate proof-of-concept, deliver at least a partial return on investment, build trust among stakeholders and produce tangible results within a shorter timeframe. Short- or near-term projects also increase the likelihood that major stakeholders, such as large health plans or hospital systems, will become engaged at an early stage in the overall e-health transformation. For new e-Health efforts, thought leaders stressed the need for critical early wins to

HealthBridge: A leader in e-health

HealthBridge is a nationally recognized health information exchange serving the Greater Cincinnati area, including several counties in Northern Kentucky. Formed in 1997, HealthBridge is the largest community-based clinical messaging system in the country. By working with all participating healthcare stakeholders, HealthBridge is facilitating an integrated and interoperable electronic community healthcare system. HealthBridge delivers electronically over 1.4 million results (laboratory, radiology, transcription and ADT) to over 4,000 physicians each month. HealthBridge provides access to over 60 hospital-based critical care systems including radiology images, fetal heart monitoring, hospital-based electronic medical records and chart completion, among others. While health care in the rest of the country is still dominated by paper, phone and fax, HealthBridge has changed the care environment in the Greater Cincinnati and Northern Kentucky area, making e-Health an everyday reality.

build momentum and extensive buy-in from key stakeholders. The hope is that these limited initiatives will serve as building blocks or intermediate steps toward more comprehensive health information networks that will eventually support expanded functionality.

Another key finding related to funding e-Health efforts. Funding for most e-Health projects around the country has relied heavily on external sources, such as federal government or foundation grants with some investment also coming from state general funds and private sector investment. One change that experts noted, however, is that the first wave of major external grant funding is trending downward. Many experts do not expect federal or foundation sources to continue to fund e-Health efforts at the level they have done so in the past few years.

Large external funding for bigger projects or start-up costs are becoming scarce and competition is stiff for states or regions wanting to jump-start a large RHIO or information exchange effort. Smaller funding streams remain available, but even those sources are more

narrowly tailored and are shifting from large-scale solutions to narrowly-tailored initiatives with near-term return on investment (ROI). The Board realized the implications of this for Kentucky's e-Health efforts – without external funding, any e-health project selected would need to be strategic and self-sustaining with a clear business case and model for sustainability.

Another area of advice repeated often was to pay close attention to federal e-health efforts and complement federal activities. Although analysts differ in their views on the most appropriate role of the federal government in e-Health, there is general recognition that certain issues may simply be tackled more effectively at the national level. Among the issues national efforts will most likely address:

- The **national architecture** that will one day link health information sites far removed from one another, such as the network that will link Paducah, Kentucky, with clinicians in Spokane, Washington

- Data and security **standards** that facilitate interoperability among the sectors, regions, and vendors of the health care market

- Determining the health IT **certification** guidelines and minimum standards for interoperability for software products and vendors.

By and large, neither federal nor state e-Health efforts have tended to focus on supporting the basic research that leads to new product development. Both private sector and academic research have led to the robust development of health IT solutions for almost every imaginable clinical or administrative need. As a result, state public and political leadership has not tended to focus its resources on supporting pure or basic research into the development of new technologies.

States are, however, increasingly looking to e-Health as a way to enhance economic development opportunities, especially the development of health information technology companies so critical to the new economy and to this emerging field. State e-health initiatives are increasingly partnering with economic development advisors to ensure new and emerging health IT businesses flourish within their borders.

Louisville Health Information Exchange

The Louisville Health Information Exchange (LouHIE) is a new Regional Health Information Organization (RHIO) in the Greater Louisville area. Established in January 2006, LouHIE was the result of two years of research and effort by faculty of the University of Louisville. LouHIE has grown into a community-wide effort encompassing a broad set of stakeholders, including representatives from payers, providers, practitioners and consumers. LouHIE's goal is to lower costs and improve healthcare in the community and is currently exploring the development of a community health record bank as the model for health information exchange in the community.

Internal Factors

Over the past year, the KEHN Board, the e-Health advisory group and Cabinet staff all have spent considerable time assessing the e-Health environment within Kentucky. Although all agree a more rigorous analysis of Kentucky's e-Health capacity is needed, e-Health leaders noted a number of factors that have shaped the initial direction of e-Health initiatives of the KEHN Board, among them:

- The lack of multiple, mature local e-health projects currently and the need for a statewide e-Health development and coordinating structure,
- The low adoption rates of electronic medical record systems, e-Prescribing and other forms of health information technology,
- Diverse geography, dispersed population across many different health care markets, and high number of border cities with populations that cross state boundaries for care,
- Related to the above, few health care markets able to sustain financially a RHIO or local e-Health effort due to the lack of a critical mass of people necessary to cover fixed costs, and
- Low level of investment in e-health relative to other states and the need for strategic use of all available resources.

Findings & Principles

Based on the assessment of Kentucky's e-Health capacity, the Board chose some key principles to guide the development of several new breakthrough initiatives. The first was that the Board should focus its initial efforts on supporting health information exchange rather than health IT adoption. While HIT is fundamental to HIE, motivating the remaining 80 percent of doctors and hospitals to adopt electronic medical records and other HIT and converting current paper records to electronic format will take many years. With so few resources, the KEHN Board simply could not subsidize HIT adoption on a scale broad enough to accomplish this goal quickly.
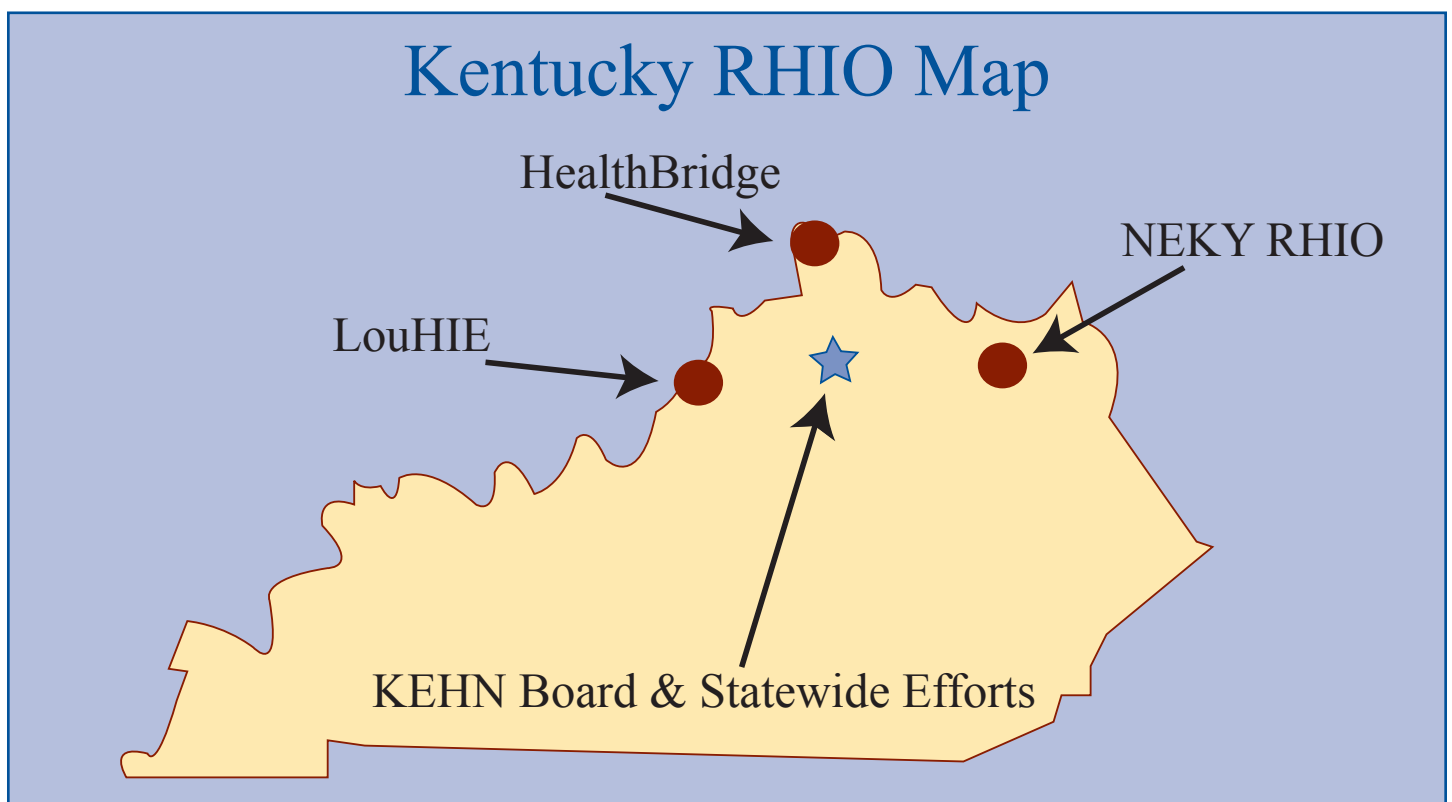
Another theme that Board leaders and staff heard frequently in discussions with national experts and state level leaders was that a real opportunity exists to move health information exchange forward by leveraging information that is already available in electronic format. Two major areas of health care are currently conducted largely electronically – 1) pharmacy and prescription drug transactions and 2) administrative transactions between health plans and providers, such as claims processing and eligibility verification. In each area, a large amount of clinical information as well as already existing workflow and capacity could be utilized to move e-Health forward

more rapidly. Board leaders and Cabinet staff had several early conversations about how best to move forward on this recommendation in Kentucky.
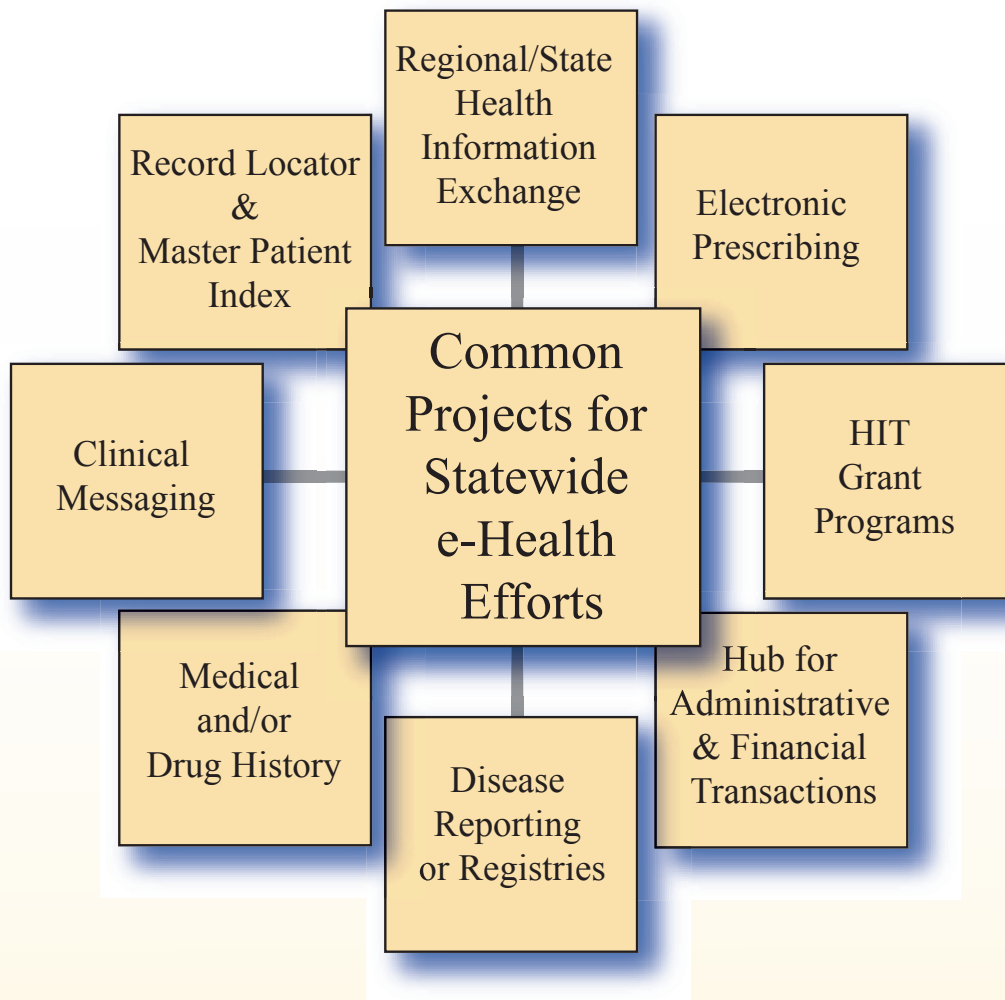
Many project ideas from other states and RHIOs were considered, including (see also Diagram on the next page):

- e-Prescribing (e.g., Rhode Island)
- Medication history or claims-based health record (e.g., Vermont, TennCare)
- Clinical messaging (e.g., HealthBridge, Indiana Health Information Exchange)
- Administrative transaction processing or simplification (e.g., Utah, New England Health Information Network)
- Disease reporting or electronic registries (e.g., Minnesota, North Carolina)
- HIT adoption grants (e.g., New York)
- Facilitating regional or state-level health data exchange (e.g., Colorado, Santa Barbara)
- Development of a state-level record locator and master patient index (e.g., Florida)

Not all of these projects would fit Kentucky's needs, level of resources, or stage of development. The Board and Cabinet staff became aware very quickly that resources and feasibility would be critical determinants of Board action and prioritization of projects would be critical.

Kentucky RHIO Map

HealthBridge

NEKY RHIO

LouHIE

KEHN Board & Statewide Efforts

Categories of Common e-Health Projects

Common Projects for Statewide e-Health Efforts

- Regional/State Health Information Exchange
- Electronic Prescribing
- HIT Grant Programs
- Hub for Administrative & Financial Transactions
- Disease Reporting or Registries
- Medical and/or Drug History
- Clinical Messaging
- Record Locator & Master Patient Index

Key Principles for Kentucky's e-Health Efforts

As the KEHN Board learned more about other states initiatives and federal efforts underway and assessed the landscape for e-health in Kentucky, a number of principles have emerged to guide Kentucky's statewide e-health effort:

1. **Be ambitious but practical** - Rome was not built in a day.
2. **Focus more on facilitating health information exchange**, versus financing HIT adoption – With limited funding, the Board had to focus on developing the means to exchange health information among those already using HIT. Exchange can drive HIT adoption.
3. **Leverage health data already available electronically and build on e-Health projects already underway** – No need to reinvent the wheel. If it is in existence already, build off of it or replicate it.
4. **Respect provider needs and practice patterns** – If you build it, they will not necessarily come. So, e-Health applications must meet the needs of clinicians and health care organizations.
5. **Identify common barriers to adoption of HIT and HIE and propose shared solutions** - Collaboration is critical, and everyone needs skin in the game.
6. **Combine long-term vision with short-term ROI** - Start small but also keep the end goal in mind in selecting projects.

KEHN Board Initiatives

After completing its assessment and administrative organization early in 2006, the Board has undertaken several critical breakthrough projects necessary for the development of e-Health in Kentucky. In addition, the Board appointed an advisory group of HIT experts, clinicians and representatives from Kentucky-based RHIOs to assist with the long-term planning needed for the statewide e-Health Network. These projects and their anticipated impact on Kentucky are described below. (See also Table 1)

Kentucky Health Information Partnership (K-HIP)

Currently the health care industry is characterized by a great deal of day-to-day administrative interaction between health care providers and health plans. Health care is the only industry of its size still characterized by repeated and costly phone calls, faxes, mailings, and multiple, non-standardized electronic log-ins and access points. All of this administrative work involves a great deal of costly staff time and does not relate directly to patient care or improve the patient experience. In a busy clinical environment, a standardized user-friendly Internet application could simplify a great deal of the administrative hassle that provider offices experience.

Another challenge within today's health care system is that all too often clinicians must make important treatment decisions based on little or no historical clinical information for a patient. Yet, there are a number of information sources already available electronically that could supply a great deal of clinical information at the point of care. We simply have not connected the pipeline of information to doctor's offices, emergency rooms and other clinical settings. Increased provider access to such clinical information could help improve health outcomes and reduce costs by:

- Avoiding misdiagnoses
- Reducing duplication of tests and services
- Decreasing adverse drug interactions
- Increasing providers' ability to check treatment against care guidelines
- Providing clinicians with additional information about their patients' medical histories

Lewis County Primary Care Center

Although not the typical e-Health champion, the Lewis County Primary Care Center (LCPCC) is one of the states leading advocates for the benefits of health information technology. Serving primarily low-income and uninsured residents in one of the Kentucky's largest rural counties, LCPCC is a community health center based in Vanceberg, with clinics in Rowan, Fleming, Mason, and Lewis County. LCPCC was an early technology adopter, successfully implementing an electronic medical record across its facilities. Clinicians have direct access from LCPCC examination rooms to patients' medical histories and a comprehensive electronic medical records system. As a result, LCPCC has one of the lowest costs per patient among comparable community health centers around the country. LCPCC has also played a key role in assisting other community health centers and facilities around Kentucky and the nation as they take the leap into the world of e-Health.

- Increasing providers' ability to review patient compliance with medication regimens
- Reducing the number of harmful medical errors.

Upon the advice of e-Health experts who urged the use of available electronic information, Secretary Mark Birdwhistell of the Kentucky Cabinet for Health and Family Services invited representatives from the major health plans in Kentucky, including Medicaid and Passport, as well as leadership from the e-Health Board and ConnectKentucky representatives to participate in a dialogue concerning e-Health. The purpose of the meeting was to explore interest in working together with the Kentucky e-Health Network Board on a statewide e-Health initiative that could use health plans' electronic claims data to add value to the health care system and improve health care quality. Secretary Birdwhistell indicated that Medicaid was interested in developing a claims-based health record for its members and invited other partners to join the Cabinet and the e-Health Board in pursuing this project as a statewide e-Health initiative.

Table 1: Kentucky e-Health Network Board Projects and Overview

Project	Description	Dates
Statewide e-Health Network Leadership		
1. Kentucky e-Health Network Board	Committee of health care leaders established by SB2 in 2005 and charged with overseeing the development of a statewide e-Health network to improve health care quality and efficiency through health information technology adoption and data exchange	November 2005 onward
2. Kentucky e-Health Advisory Group	Group of technical, clinical and financial professionals charged with advising the Kentucky e-Health Network Board on the development of a statewide e-Health network and developing a business plan for implementing e-Health in Kentucky	July 2006 onward
Major Statewide e-Health Projects		
1. Health Information Security and Privacy Collaboration (HISPC) Project ■ Steering Committee ■ Variations Work Group ■ Legal Work Group ■ Solutions Work Group	■ Federally-funded collaboration to assess how privacy and security practices and polices affect health information exchange (HIE) ■ Broad set of stakeholders will assess privacy and security policy, practice and state law and develop state implementation plan ■ Steering Committee will oversee project, advise the e-Health Network Board, and develop a state implementation plan based on findings of the three working groups ■ Variations Working Group identifies business practices and policies related to privacy and security that are barriers to HIE ■ Legal Working Group identifies legal barriers to HIE ■ Solutions Working Group develops inventory of possible actions to address business and legal barriers to HIE	May 2006-March 2007
2. e-Prescribing Partnerships in Kentucky (ePPIK) Grant Program	■ CHFS and KEHN Board initiative to incentivize the development of provider partnerships to adopt e-prescribing	May 2006 – August 2007
3. Kentucky Health Information Partnership (K-HIP)	■ Partnership to develop common web portal for provider-payor communications ■ Portal will have a clinical area for accessing a patient health summary and an administrative area for handling common administrative transactions electronically	May 2006 onward
4. Kentucky e-Health Summit	■ Statewide meeting of payors, providers, policy makers, consumers and other interested stakeholders around e-Health issues in Kentucky	January 2007

Table 2: Standard Functions and Information Proposed through the K-HIP Web Portal	
Clinical Information	**Administrative Information**
■ **Rx history** - including medication – identified by national drug code; date prescription filled; days of supply ■ **Provider service information** – including outpatient, inpatient and emergency room visit information with name of the treating provider, place of service, date of visit, reason for the visit, procedures performed during the visit, and provider phone, city and state ■ **Diagnosis codes** - including diagnosis, dates patient received care for this diagnosis, the place of service, and the doctor ■ **Lab and diagnostic test history** - type of lab/test performed, date lab/test performed, place of service and doctor ordering ■ **Immunizations**– immunization, date performed ■ **Patient information** – such as name, date of birth, age, gender, address, and phone	■ **Request for eligibility verification** ■ **Submission of request for pre-authorization** ■ **Check status of prior authorization request** ■ **Submission of new medical claims** ■ **Check status of submitted claims**

In August 2006, the Cabinet on behalf of the group presented a concept paper to the Kentucky e-Health Network Board that proposed joint development of a statewide Internet portal with two main areas of functionality: a clinical site that could deliver to providers a patient health summary based on claims data and an administrative site for conducting standard administrative transactions across all plans, such as claims submission and eligibility and benefits verification (see Table 2, above). The group designated this initiative the Kentucky Health Information Partnership or K-HIP.

A common administrative portal and a patient health summary can optimize the flow of information between all health care stakeholders. This, in turn, can improve health outcomes, eliminate administrative inefficiencies, reduce costs, and enhance the patient experience in Kentucky's health care system. Most importantly, this solution is achievable within a relatively short timeframe from a technological and business standpoint and would contain information for a critical number of Kentucky residents.   If successful, K-HIP would have information for more than 60 percent of Kentucky's 4 million residents, including Medicaid's 710,000 enrollees including the 135,000 enrolled in the Passport managed care plan in Louisville; 231,000 Kentucky state employees; and more than a million of Kentucky's privately insured residents.

While it is difficult to estimate exactly the impact that the K-HIP project could have on Kentucky's health care system, recent studies and anecdotal evidence suggest significant health care quality improvements and cost savings could result. A recent study in Delaware compared the costs for treatment of patients in emergency rooms with access to a claims-based health record. The study found that costs were more than $500 lower for patients for whom clinicians had access to a payor-based health record.[6] Other analyses have found more moderate savings of between $10-$27 per ER visit for those with some form electronic health record.[7] Even using the more moderate figure of $25 savings per ER encounter, Kentucky could potentially save nearly $7 million on just inpatient admits from the emergency room, a small fraction of overall emergency room visits (See Table 3). In addition, some analysts estimate that providing an electronic drug history for patients

Table 3. Estimated Savings Using a Claims-based e-Health Record assuming Savings per Emergency Room encounter	
Inpatient Admits from ER in Kentucky, 2005	
Admits	270,812
$25/encounter	$6,770,300
$500/encounter	$135,406,000

could save as much as 5 percent of drug costs. [8] If this were so, Medicaid alone could have reduced its drug spending in 2005 by $32,500,000 with the availability of an electronic drug history.[9] Across all payors, drug cost and ER savings combined could be more than $40 million dollars. These estimates do not include the additional reductions that could come from the elimination of duplicate labs, tests and imaging; improvements in quality of care from more accurate diagnoses and improved information across multiple care settings; fewer hospitalizations and less time spent handling administrative tasks.
Since delivering the concept paper to the Board, the K-HIP group has continued to meet to flesh out the specifics of the proposal, including developing a governance model, technical requirements and business plan. In October 2006, the Cabinet submitted an application for a Medicaid Transformation Grant to support Medicaid's leadership and use of the Kentucky Health Information Partnership. The partnership plans to meet throughout the Fall of 2006 and bring a full proposal to the Board in January of 2007 with plans for initial development and deployment by the Fall of 2007.

Health Information Security and Privacy Collaboration

One of the critical concerns with the public about electronic health information exchange is the protection of the privacy and security of personal health information. In addition to privacy concerns, many analysts believe that our current systems and workflows for exchanging information in a predominantly paper environment pose critical challenges as the health care system moves increasingly to electronic exchange. To address these issues, the federal government has spearheaded a project in partnership with states to assess how privacy and security practices and policies affect health information exchange (HIE).

Kentucky is one of 33 states participating in the Health Information Security and Privacy Collaboration, a federally-funded collaboration

Northeast Kentucky RHIO

The Northeast Kentucky RHIO is a partnership between Morehead University, Northern Kentucky University and St. Claire Regional Medical Center. Currently under development, the Northeast Kentucky RHIO seeks to establish a health information exchange that serves the northeastern Kentucky region.

Kentucky Corrections Health Services Network

The Kentucky Department of Corrections has successfully implemented the Kentucky Corrections Health Services Network, a collaboration with the University of Kentucky and CorrectCare to create a medical network for the corrections population and utilize technology to reduce costs and improve the delivery of care. KCHSN utilizes an electronic medical record and a related e-Consultation tool to ensure both access to specialty care and appropriate continuity of care for the inmates needing care outside a correctional facility. Within one year of implementing this system, the Department of Corrections saw $9 million dollars in savings were realized.

involving the Office of the National Coordinator, the Agency for Healthcare Research and Quality, RTI, and the National Governors Association. For Kentucky's project, the Cabinet for Health and Family Services serves as the project manager and is partnering with the University of Louisville and the University of Kentucky on key deliverables for this project.

There are multiple working groups established under the Collaboration that are identifying and addressing business practice and legal barriers to HIE. The Variations Working Group (VWG), staffed by the University of Louisville and CHFS, is made up of

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[6] Vincent J. Willey, Gregory W. Daniel, "An Economic Evaluation of Use of a Payer-Based Electronic Health Record within an Emergency Department," HealthCore, June 24, 2006.

[7] Estimates from an unpublished study by the Indiana Network for Patient Care and Dr. Marc Overhage of the Regenstrief Institute.

[8] Comments by Dr. Charles Safran at the July 18, 2006, Kentucky e-Health Network Board meeting.

[9] Estimate based on data from the Department for Medicaid Services calculations of $650,000,000 FY 2006 annual spending on prescription drugs.

stakeholders in the healthcare industry from across the state. The VWG is tasked with identifying the business practices of health care entities that relate to ensuring the privacy and security of personal health information when it is transferred from one entity to another. The VWG will further indicate those business practices that serve as barriers to electronic HIE. The Legal Working Group (LWG), which consists of prominent health care attorneys in Kentucky, will examine the legal drivers associated with the business practices classified as barriers and make recommendations to the Solutions Working Group (SWG) on how to address them. The University of Kentucky and the Cabinet for Health and Family Services will submit a report assessing variations in privacy and security practices and the policies and law associated with them. The SWG, staffed by the University of Kentucky, will develop an inventory of potential solutions to the barriers identified, prepare a Solutions Report and make recommendations to the Steering Committee. The Steering Committee, which has broad stakeholder representation, is overseeing the project and will present an implementation plan for the state to RTI, the federal contractor for the Collaboration.

 The project is anticipated to generate a number of recommendations to the KEHN Board on changes that need to be made to practice, policy and law in Kentucky in order to ensure the ability to exchange health information securely and confidentially using electronic means. In addition, the micro-level assessment of privacy and security practices and policies will assist the KEHN Board with determining vulnerabilities and obstacles to implementing an e-health Network.

The e-Prescribing Partnerships in Kentucky (ePPIK) Grant Program

E-Prescribing is widely viewed as an important early win that can drive adoption of HIT by physicians and increase the efficiency and safety of health care. The Cabinet for Health and Family Services is partnering with the Kentucky e-Health Network Board and the Governor's Office for Local Development to offer a new grant program to fund adoption of health information technology to advance the e-Prescribing in the Commonwealth. The e-Prescribing Partnerships in Kentucky (ePPIK) Grant program will provide

Murray Primary Care Medical Center

Primary Care Medical Center in Murray was one of the first clinics to go fully digital with an electronic medical records system to improve care and enhance safety. With an electronic medical record, all of prescriptions at the Primary Care Medical Center are generated electronically and are checked against allergies, disease condition, age, and drug to drug interactions. The computerized record also eliminates handwriting errors. The privacy of patient's medical records is also enhanced through the various levels of security available with an electronic record system versus a paper chart which can be seen by anyone and for which there is no electronic record of access. Primary Care Medical Center has been featured in national publications such as Healthcare Informatics and Medical Economics.

funding for physician's offices and clinics that want to purchase HIT software that includes e-Prescribing capability. In addition, the ePPIK grant program will promote the formation of partnerships within a community between physician's offices, hospitals, pharmacies and other health care entities to facilitate true end-to-end electronic prescription processing.

A total of $300,000 in funding for the ePPIK grant program comes from the Foundation for a Healthy Kentucky and the Hal Roger's Grant Program within CHFS that supports the Kentucky All Schedule Prescription Electronic Reporting (eKASPER), the nation's premier program to monitor prescription drug abuse of controlled substances. These two sponsors are interested in improving health care in Kentucky and learning how e-Prescription adoption will affect the KASPER program.

The Governor's Office for Local Development will serve as the administrator of the grant under the direction of CHFS. Grant applicants are required to match grant funds with their own investment. The Cabinet anticipates awarding ePPIK grants and fostering adoption of e-Prescribing in several communities across the state. Grant applications

are currently being accepted with the application process slated to end in early December and awards announced in January during the Kentucky e-Health Summit.

Kentucky e-Health Summit

Because of the highly collaborative nature of e-Health, one of the critical needs in Kentucky is to inform, inspire action and discuss critical needs and challenges among a broad cross-section of stakeholders about the progress of e-Health and the work of the Kentucky e-Health Network Board.

The KEHN Board plans to host a statewide e-Health Summit in January 2007 as a means to bring together payors, providers, consumers and other interested stakeholders to learn about and discuss the development of e-Health in Kentucky. A number of prominent national speakers are invited to participate, including U.S. Department of Health and Human Services Secretary Mike Leavitt and federal e-Health leaders. An e-Health Idea Fair will showcase options for Kentucky stakeholders related to HIT and HIE. Workshops and regional roundtables will provide critical networking and skill-building activities critical to e-Health progress in Kentucky.

e-Health Advisory Group

With several interim projects in place, the KEHN Board also has recognized the need for long-term planning to guide Kentucky's e-Health efforts both at the state-level and at the local and regional level. In July 2006, the KEHN Board appointed an e-Health Advisory Group, consisting of technical and clinical experts in e-Health and representatives from the state's current RHIOs. KEHN Board leadership gave the advisory group the task of developing recommendations for the Board regarding the long-term framework for e-health in Kentucky and the development of a statewide e-Health network.

Owensboro Medical Health System

Recognizing that building a community electronic medical records system could improve quality, Owensboro Medical Health System began exploring ways to assist physicians in the Owensboro area with acquiring electronic medical record systems. Despite the fact that most patients in the community needing inpatient treatment would go to the OMHS, federal laws prevented OMHS from providing its EMR system to physicians in the community. Recent changes in federal regulations, however, that provide safe harbors for health IT collaborations among hospitals and physicians are giving new life to e-Health efforts in Owensboro. OMHS will soon offer its EMR systems to physicians in the community using an application service provider (ASP) model that is more affordable for physician practices. Physician practices will have little up front costs and will only pay a low annual fee per physician. E-Prescribing is included in the records system, initially through computer messages to a pharmacy's fax, but building toward computer to computer e-prescribing. The hope is eventually to improve the quality and efficiency of care further through allowing clinical data sharing and establishing a network among physicians and the hospital.

The advisory group began meeting in August 2006 and plans to develop an initial action strategy that it can present to the KEHN Board in the Spring of 2007. Several members of the advisory group have volunteered to serve as liaisons to the federal American Health Information Community workgroups and report back to the advisory group and the KEHN Board on developments at the federal level.

The Future of e-Health in Kentucky: Vision, Challenges and Recommendations

While the KEHN Board has made significant early progress since it began meeting, there is still much to do to reach the ambitious mission and vision laid out by Kentucky's e-Health legislation and its e-health leadership.

The Board believes that Kentucky faces an important opportunity to lead the national discussion and to transform its health care and public health systems through the strategic application of information technology. e-Health can help us lower costs, enhance quality and improve health outcomes in Kentucky. But one clear insight from the past year is that neither state government nor the private sector can accomplish this far-reaching vision alone. Collaboration in e-Health is not only important, it is essential.

Thus, the Kentucky e-Health Network Board asks Kentucky's political leadership, the health care community, the business sector and the public at large to join in support of the Board's efforts to transform health and health care for the better. Outlined below are some of the critical challenges we face ahead and the recommendations the Board forwards for action.

Fostering an electronic culture across Kentucky's health sector

One of the most fundamental challenges to e-Health is the change in the culture and workflow of health care that must occur. To trigger a change of this magnitude, Kentucky leaders need a fundamental understanding of the capacities and needs of clinicians and other actors in the health sector. Thus, one of the first recommendations from the Board is the development of a broad-based survey of e-Health capacity in the state accompanied by an assessment of the needs and challenges facing those interested in adopting and leading HIT or HIE efforts. An e-Health inventory and needs assessment would provide critical baseline data for the Commonwealth that is necessary for more informed decisions and construction of a long-term e-Health strategy. Using the data from the inventory and needs assessment, the KEHN Board then recommends the development of tools and technical assistance that would target critical challenges to technology adoption and information exchange.

Another challenge to creating an e-Health culture is the perverse incentives that exist in our current system. Many analysts argue that we pay providers based on how many and what procedures they perform not on quality or outcomes. Thus, the incentive structure must begin to change to reward those providers that invest in HIT and HIE and thereby are able to improve the quality and efficiency of the care they provide.

At the federal level, HHS is encouraging states and large private sector employers to join the federal government in utilizing their purchasing power to reward those who utilize information technology to provide higher quality, lower cost care. Kentucky needs to assess its incentive structure and develop ways to encourage and reward those who utilize HIT and HIE in order for an e-Health culture to emerge.

Developing significant state-level HIE infrastructure while encouraging development of and coordination with local e-Health innovators

One fundamental difference between Kentucky and many other states involved in e-Health is the lack a local e-Health infrastructure. Kentucky has only three RHIOs currently organized and of those three, two are in the early stages of development. This is both a challenge and an opportunity for Kentucky. Because health care is delivered predominantly in local settings – in nearby physician offices, clinics, hospitals, labs, diagnostic centers and ambulatory surgical centers – HIE development at the local level is important to Kentucky. However, Kentucky's local efforts face a critical challenge. Because Kentucky's population is dispersed and varies widely from its urban centers to it rural areas, only a few health care markets have a critical mass of patients necessary to sustain financially a robust, stand-alone health information exchange.

Thus, the KEHN Board recommends that the state take a two-tier approach to the development of a statewide e-health network. At the state-level, a critical core of HIE infrastructure needs to exist. At the same time, state e-Health efforts must support dialogue and development of new local e-Health efforts. In this way, the statewide e-Health infrastructure would serve a dual purpose of fostering HIE statewide as well as serving as a support and coordination structure for local HIT and HIE efforts.

Investing in a higher quality, lower cost health sector

One fact no one can argue. Technology is expensive. Yet, it is also true that the most expensive health care system for Kentucky to operate is the outmoded, paper-based system we have currently. To see real change occur, all stakeholders need to be willing to invest their resources – time, energy, and money – into seeing e-Health become a reality. Further progress toward a lower cost, higher quality health care system cannot be achieved without significant public and private investment in e-Health.

In comparison with other states, Kentucky's public and private investment in e-Health is small:

- **Arizona** – State government committed $1.5 million for rural HIT adoption.
- **Massachusetts** – More than $50 million was committed by Blue Cross Blue Shield of Massachusetts toward an e-Prescribing initiative.
- **Minnesota** – State government committed $1.3 million for a community HIT grant project.
- **New York** – State government committed to spending more than $1 billion in total e-health funding with $52.9 million in 2005 for HIT adoption grants and other projects.
- **Rhode Island** – The state committed $ 6 million toward a statewide RHIO.
- **Washington** – A total of $1 million was committed to the statewide public-private e-health collaboration.

While state government funding has played a critical role in many of the examples given above, significant private investment has also played a key role around the country in supporting statewide and regional e-Health efforts. For example, HealthBridge is funded almost entirely by its partners in the community. Because of the possibility for significant return on investment in e-Health, it can be argued that every health care entity, employers, state government, non-governmental organizations, academia and consumers should all be involved in supporting the development of a secure, electronic, interoperable health network in Kentucky because all will benefit from e-Health. The Kentucky e-Health Network Board welcomes both the involvement and the investment of both public sector and private sector partners.

Conclusion

With the initial investment from the legislature, some foundation and federal funding, the KEHN Board has already initiated a number of projects that have the potential to change the culture of health care in Kentucky. With further strategic investments, the Board will continue and expand its work to transform health and health care in Kentucky to achieve lower cost, higher quality care.

e-Health is a uniquely collaborative venture. The vision and recommendations provided in this report cannot be accomplished through the work of any single entity acting on its own. The Kentucky e-Health Network Board has relied on the support and counsel from staff at the Cabinet for Health and Family Services, leadership from the University of Louisville and the University of Kentucky and the participation of its many public and private members. The hope of the KEHN Board is that this report will serve as the start of an even broader conversation about the direction and future of e-health in Kentucky.

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APPENDIX A: Kentucky e-Health Network Board Members

Carol Steltenkamp, M.D., MBA (Chair for UK) is a board-certified general pediatrician with experience in private practice and traditional academic medicine. Dr. Steltenkamp received a Bachelor of Science from Xavier University in Cincinnati, Ohio and an M.D. from the University of Cincinnati. After completing her MBA at the University of Kentucky, she became particularly interested in Healthcare Information Technology and Financing and their impact on her ability to provide the highest quality of care for her patients. Dr. Steltenkamp is currently the Chief Medical Information Officer for UK HealthCare where they have become national leaders in the deployment of the electronic Health Record.

Larry Cook, M.D. (Chair for UofL) was appointed by the UofL Board of Trustees as Executive Vice President for Health Affairs (EVPHA) in April 2005, after serving in an interim capacity since August 2004. He assumed the leadership of the UofL Health Sciences Center, located in downtown Louisville, which includes oversight of the Schools of Medicine, Nursing, Dentistry and Public Health, as well as 17 centers and institutes. As EVPHA, Dr. Cook also serves as a key member of President James Ramsey's leadership team. Dr. Cook is a member of the University Medical Center, Inc. Board of Directors and also serves as Chairman and CEO of the UofL Health Care Board of Directors. Dr. Cook joined the UofL faculty in 1974 after completing his pediatric residency at the University of Colorado Medical Center and his neonatology fellowship at UofL. He was named chair of the pediatrics department and chief of staff at Kosair Children's Hospital in 1994, and is a practicing neonatologist, who is regarded as the architect of advanced technology neonatal intensive care in the region. He also is past president and chairman of the School of Medicine's practice plan board and the Medical School Practice Association. Dr. Cook obtained his B.S. and M.D. from the University of Louisville.

William D. Hacker, M.D., was appointed acting commissioner of the Kentucky Department for Public Health in July 2004 and commissioner in November 2004. Hacker earned his bachelor's and medical degrees from the University of Kentucky and completed a pediatric residency at the UK Medical Center. He practiced pediatrics in Corbin for 18 years, served as chief medical officer for Appalachian Regional Healthcare, and held several positions in the Kentucky Department for Public Health before assuming the responsibilities of commissioner last year. Hacker is a native of Clay County, Kentucky, and he and his wife, Kaye, have 3 children and 5 grandchildren, all of whom live in Kentucky.

Glenn Jennings was appointed commissioner of the Department for Medicaid Services in the Kentucky Cabinet for Health and Family Services in July 2006. He is currently overseeing the successful implementation of KyHealth Choices, Kentucky's Medicaid modernization plan which has received national recognition and is transforming the state's program into a fully functioning health and wellness plan that serves nearly 700,000 members. Commissioner Jennings joined Medicaid after a successful career at the Kentucky Office of Insurance (KOI), where he was appointed executive director in April 2005. He originally came to KOI in January 2002, serving as deputy commissioner, and was acting executive director of the agency from December 2003 to July 2004. His accomplishments at KOI include automating agent licensing and tracking functions, addressing regulatory issues related to e-commerce, and overseeing commercial private health insurance plans. A former deputy commissioner of Medicaid, he has over 20

years of experience in the health care field, specializing in financial management and information processing. In addition to his state government experience, he has spent significant time in the private sector, working with provider organizations and Medicaid programs in Tennessee, Mississippi and other states. The Kentucky native began his state government career in 1974 where he worked in the information systems area on various welfare entitlement programs for seven years before moving to the Department for Medicaid Services. He serves as a member of a number of boards and committees including the Kentucky e-Health Network Board and the Kentucky Commission on Elder Abuse. A graduate of Western Kentucky University, Commissioner Jennings lives in Lawrenceburg. He and his wife, Anita, have two children, Richard and Katie.

Barbara Haunz Asher works in pharmaceutical sales for AstraZeneca International. She is a native of Oldham County, graduated from Centre College and resides in Prospect.

Ford Brewer, M.D., joined Toyota as medical director in 2000. A graduate of the Baptist College at Charleston and the Medical University of South Carolina, he completed his residency and received a master's degree in public health at Johns Hopkins University. He also serves on the faculty of the University of Kentucky Chandler Medical Center as chair of the Preventive Medicine Advisory Committee. Prior to joining Toyota, Brewer served as national medical director for Meridian Corporate Healthcare in Nashville, medical director for National Health Services, Inc., in New York City, director of the Preventive Medicine Residency Program at Johns Hopkins, and chief medical officer for the Maryland Department of Corrections.

Frank A. Butler became the vice president for medical center operations at the University of Kentucky in September 2001. He had previously served as vice chancellor for planning and systems development and had been director of UK Hospital from 1981 to 2001. Butler was an associate director at University of Kentucky Hospital from 1975-80 and served as an associate director of the University Hospital at the Medical University of South Carolina Charleston for three years. He was assistant director for management and engineering services at the Virginia Hospital Association in Richmond for three years. He has a bachelor's degree in industrial engineering from Virginia Polytechnic Institute and a master's degree in hospital administration from the Medical College of Virginia.

Bobby H. Dampier is president and CEO of the Trover Foundation in Madisonville. Dampier previously served as CEO of Regional Medical Center and executive vice-president of the Trover Foundation. He is past chairman of the Kentucky Hospital Association, has held a number of offices with the Foundation for a Healthy Kentucky, was a member of the Health Insurance Advisory Council and is currently a member of the American Hospital Association Regional Policy Board. Dampier is a United States Army veteran and served as a medic in Vietnam. He received a bachelor's degree from the University of North Carolina and a master's degree in hospital administration from Duke University.

Marsha L. Donegan serves as vice president of regional support for Fidelity Investments in Covington. She graduated with a degree in computer information from Weber State University and has completed graduate coursework in computer science at Utah State University. She resides in Erlanger and is married to Daniel Donegan.

Mark Rutledge, Commonwealth Office of Technology Commissioner, came to the service of the state from the private sector in 1999, where he worked as vice president of data communications for a financial holding company. Since his arrival in COT, Rutledge has served in a number of leadership roles, including executive director of Infrastructure Services, and most recently, deputy commissioner. While deputy commissioner, Rutledge sponsored many of COT's key initiatives, like the adoption of the Infrastructure Technology Information Library (ITIL) methodology, and the digital conversion of the Kentucky Emergency Warning System (KEWS). Additionally, he served as chairman of the Kentucky Wireless Interoperability Executive Committee (KWIEC), and championed the reconstruction of COT's delivery and cost recovery models. Rutledge is a native of Franklin County. Rutledge, his wife Ann and their four children live on the family farm in Frankfort.

Robert Hughes, M.D., is a physician with the Primary Care Medical Center in Murray. He is a graduate of Prestonsburg Community College, Transylvania University and the University of Louisville. In addition, Hughes is a member of the Kentucky Medical Association, the American Academy of Family Physicians, the Kentucky Academy of Family Physicians, and the Calloway County Medical Association. Hughes is married to Joyce Marie Hughes, M.D.

Bruce Klockars has served as president and CEO of Flaget Memorial Hospital in Bardstown since 2001. A graduate of McPherson College, he attained a master's degree in health care administration from Trinity University in San Antonio, Texas. Prior to joining Flaget, Klockars was senior vice president and COO of Saint Joseph Hospital in Lexington from 1990 to 2000, including a stint as interim president and CEO. He has also been a hospital administrator in Florida and Texas and a pilot in the U.S. Army. Klockars and his wife, Diane, have two sons, Jeff and Andrew.

Jack Lord, M.D., is senior vice president and chief innovation officer for Humana in Louisville. Lord joined Humana in 2000 to help develop the company's business strategy and direct the design and implementation of health plan products and clinical services. Lord is a board-certified forensic pathologist with 21 years' experience in medical practice. He began his medical career in the U.S. Navy, where he spent 11 years on active duty, most recently as director of quality assurance for the Naval Medical Command in the Office of the Surgeon General. As a consultant and surveyor for the Joint Commission on Accreditation of Healthcare Organizations, and through subsequent executive positions at SunHealth, Ann Arundel Medical Center, the American Hospital Association, and HealthDialog, Lord has become one of the nation's leaders in promoting innovation and quality improvement in health care. Lord received his medical degree from the University of Miami in 1978 and has received numerous academic appointments in his career, most recently as an adjunct professor of community and family medicine at Dartmouth Medical College. Lord has served on numerous boards and advisory panels, including a current position on the National Advisory Council for Healthcare Research and Quality, a prestigious appointment providing advice to the U.S. Secretary of Health and Human Services on national health policy and research priorities.

Kimberly Williams, M.D., is a physician with St. Claire Regional Medical Center in Morehead. Williams is board certified in pediatrics and emergency medicine and has been with St. Claire since 1988. For the past eight years, she has also served as the vice president for medical affairs and physician services. Williams is a community-based faculty member for the University of Kentucky College of Medicine and serves as the medical director for the Northeast Area Health Education Center. Williams is the current chair of the Kentucky TeleHealth Board and a member of the Morehead/Rowan County Chamber of Commerce Executive Board and the Morehead State University Foundation Board. She is a charter member of the Morehead Rotary Club and is active in the Morehead Church of Christ. A native of Paintsville, Williams and her husband, Dion, have two children and three grandchildren.

Deborah Clayton was named commissioner of the Department of Commercialization and Innovation, formerly known as the Office of the New Economy, in June 2005. Before being appointed to her current position, Clayton served as the founding executive director of the Charlotte (NC) Research Institute, a non-profit corporation established in support of the University of North Carolina at Charlotte. Clayton also served previously as the assistant director for the electron microscopy laboratory at the University of Alabama, co-founder and COO of a high-tech start-up firm in Chicago, and manager of operations for the Argonne National Laboratory's (ANL) Office of Technology Transfer. She has a bachelor's degree in biology from Tulane University and Newcomb College and a master's degree in higher education administration from the University of Alabama.

Thomas D. Layzell is president of the Kentucky Council on Postsecondary Education. Layzell served as Mississippi's commissioner of higher education from 1995 to 2003. An Illinois native, he served as chancellor of the Illinois Board of Governors of State Colleges and Universities from 1985 to 1995. From 1976-1984, Layzell served as deputy executive director and treasurer of the Board of Governors, and from 1984-1985 as executive director of the Board. Layzell worked at Governors State University in University Park, Ill., from 1969 to 1976, advancing to the position of vice president for administration. He also served as a staff member at the Illinois Board of Higher Education from 1966-1969. Layzell earned a bachelor's degree at Millikin University and both a juris doctorate in law and a master's degree in public administration from the University of Illinois in Urbana. Layzell is president of the State Higher Education Executive Officers. He is a former president of the National Association of System Heads and former member of the Council of Presidents of the Association of Governing Boards. He and his wife, Joan, are the parents of one son and three daughters.

Mark Birdwhistell was appointed by Governor Fletcher as secretary of the Cabinet for Health and Family Services in December 2005. Previously, he served as the undersecretary for health and as secretary, he continues to provide direct supervision and administrative leadership for the Cabinet's health programs and services, including Medicaid, public health, mental health and mental retardation and health policy. Birdwhistell has more than 27 years of experience in health care management in both the private and public sectors. Prior to his appointment as undersecretary, from 1998 to January of 2004 he served as the chief executive officer for CHA Health, a Lexington managed care organization with 200,000 members. While there, Birdwhistell helped turn CHA Health into a successful health plan that includes a network of 140 hospitals

and 10,000 physicians. Birdwhistell is a native of Lawrenceburg, Ky and a graduate of Georgetown College and the University of Kentucky. He holds a master's degree in public administration from UK. He is a past president of the Kentucky Association of Health Plans and serves on advisory boards for the UK's Martin School of Public Policy and Administration. He has also served as associate hospital director for managed care at the UK Medical Center and was a director for program development and budget in the Department for Medicaid Services from 1989-1994.

Julie Mix McPeak was appointed by Governor Ernie Fletcher as executive director of the Kentucky Office of Insurance in July 2006. A 1994 graduate of the University of Louisville Brandeis School of Law, McPeak most recently was general counsel for the state Personnel Cabinet, working primarily with the state's self-funded health insurance plan. She previously has worked as attorney for the Kentucky Commission on Human Rights and the Health Policy Board and was an associate at Hodge & Kelley Law Offices in Louisville. A native of Louisville, McPeak was an attorney with KOI for nine years, including five as general counsel. She served as lead counsel for insurer receivership litigation and the rehabilitation or liquidation of insolvent insurers. She was co-counsel for Kentucky Association of Health Plans v. Miller before the U. S. Supreme Court. McPeak lives in Frankfort with her husband, Troy, and daughter, Anne.

Senator Daniel Mongiardo represents Kentucky's 30th Senate District, covering Harlan, Bell, Leslie and Perry Counties. He has served as the chief of staff at the Hazard Regional Medical Center and Otolaryngologist (ENT Surgeon) at the Hazard Appalachian Regional Medical Center. He completed his residency at McGill University in 1991 and holds a bachelor's degree from Transylvania University and graduated from the University of Kentucky College of Medicine. He serves on the Hazard/Perry County Industrial Development Board, the Rotary Free Clinic Board and the Hazard Independent School Foundation Board.

Senator Richard L. Roeding represents Kentucky's 11th Senate District including Boone, Gallatin and portions of Kenton County. He is a registered pharmacist. Roeding holds a bachelor's degree from the University of Cincinnati and served in the United States Army. He is a member of the Kentucky Pharmacists Association and past director of the Northern Kentucky Pharmacists Association Diocesan Catholic Children's Home. He has also served with several organizations including the Covington/Kenton County Lions Club, Ft. Mitchell Board of Adjustment, Northern Kentucky Chamber of Commerce, National Association of Retail Druggists, Covington Catholic School Board (past president), Blessed Sacrament, Villa Madonna Booster Club (founding member/past president), and American Legislative Exchange Committee (state chair, 1991-1999). He was named National Legislator by the National Republican Legislature Association. Roeding has received several awards including the Legislative Award from the American Pharmacy Services Corporation, the Kentucky League of Cities Legislative Award, the National Federation of Independent Business Guardian of Small Business Award, the Cincinnati Children's Hospital Legislative Leadership Award, and the American Legislative Exchange Council Legislator of the Year.

Representative Tommy Thompson represents Ohio County and parts of Daviess County in the Kentucky House of Representatives. He is president of Thompson Homes, Inc. Thompson received his bachelor's degree from the University of Florida and his MBA from Indiana University. He has served on several boards including BB&T, Junior Achievement of Greater Owensboro, Cliff Hagan Boys and Girls Club, Leadership Owensboro, Brescia University Board of Trustees, and the local School-To-Work Program. He received the Mayor's Award for Excellence and was recognized as Outstanding Young Man of Owensboro. Thompson was named to the Outstanding Young Men of America, the Kentucky Housing Hall of Fame and the National Housing Hall of Fame. He is co-chairman of the House Program Review and Investigations Committee and vice chairman of the House Banking and Insurance Committee.

Representative Stephen Nunn represents Barren County and portions of Warren County in the Kentucky House of Representatives. He is a strategic development consultant. Nunn attended the University of Kentucky and holds a bachelor's degree from Transylvania University. He is a member of several boards including the Museum of the Barrens Board, Barren County ARC and the Glasgow Chamber of Commerce, and served in the White House Intern Program.

Kentucky e-Health Advisory Group Members

Lorna Jones, Chief Information Officer, Cabinet for Health and Family Services (Chair)

Gordon Wong, Medical Informatics Director, Anthem/Wellpoint

Greg Aaron, General Manager and Director, Healthcare National Practice, Quilogy

Jeff Brady, Chief Information Officer, Appalachian Regional Healthcare

Rob Sprang, Director, Kentucky Telemedicine program, University of Kentucky

Tony Farley, Director of Information Systems, St. Elizabeth's Medical Center

Greg Cooper, family physician, Cynthiana, KY

George Dix, Vice President of Information Technology, Catholic Health Initiatives

Daniel Varga, Senior Vice President, Norton Healthcare

Bob Esterhay, Associate Professor and Chair, Department of Health Management and Systems Sciences, University of Louisville School of Public Health and Information Sciences

Elizabeth Regan, Professor and Department Chair, Information Systems, College of Business, Morehead State University

Shawn Glisson, Physician, Kentuckiana Cancer Institute

Appendix B: Kentucky e-Health Network Legislation

216.267 Duties and responsibilities of Kentucky e-Health Network Board -- Permitted functions of the board -- Elements of fully implemented Kentucky e-Health Network.

(1) The duties and responsibilities of the board shall be to implement and oversee the operation of an electronic health network in this Commonwealth, to be known as the Ke-HN.

(2) The board shall:

(a) Exercise all of the administrative functions of the board;

(b) Appoint an advisory group that shall meet at least quarterly for the purpose of collaborating with health-care providers and payors, computer technology companies, telecommunication companies, and other affected entities to ensure input into the implementation of the Ke-HN;

(c) Review models for an electronic health network;

(d) Oversee the development of comparative business cases for the models reviewed and choose a model to be implemented in this Commonwealth. In selecting a model for implementation, the board shall consider the following elements:

1. Various models and configurations for Ke-HN, either as developed from the board's research or as recommended by public and private experts. Each model or configuration shall be capable of supporting administrative and clinical functions listed in subsection (4) of this section, including the capability to integrate with an electronic Medicaid management information system, provide immediate health alerts to health-care providers across the state, support health-care provider education related to the identification and treatment of rare and unusual diseases, serve as a registry of the existence and location of advance directives related to health care or mental health treatment, and serve as a registry of organ donations. The model chosen may be implemented in phases, as determined by the board;

2. Projected costs of the network, indicating those which would be allocated to state government, health-care providers, insurers, or others;

3. Options for financing the start-up, administrative, and maintenance costs, projected returns on investments, a timetable for realizing those returns, and any proposed subscription or transaction fees associated with the Ke-HN;

4. Procedures intended to secure protected health information in accordance with HIPAA;

5. Timetables for implementation of the Ke-HN, whether as a fully established network, in phases, or through the use of a pilot project or regional approach to the Ke-HN;

6. Suggested incentives to promote the use of Ke-HN by health care providers and payors, and the Medicaid program; and

7. Incentives, including but not limited to tax credits, low-interest loans, and grants, under Subchapters 22, 23, 24, 26, and 28 of KRS Chapter 154 for a company that develops or manufactures software necessary for the development of the Ke-HN, if the company meets all the eligibility requirements under the respective subchapter in KRS Chapter 154;

(e) Receive comments from the advisory group created in paragraph (b) of this subsection;

(f) Submit a description of the model chosen for implementation to the Legislative Research Commission for the opportunity for any comments;

(g) If state funds are required for implementation of the model chosen, seek funding through the appropriations process;

(h) Oversee the implementation of the model chosen subject to the appropriation of funds. Oversight shall include the following:

1. Developing any central interchange, including any central server and software;

2. Developing the Ke-HN of providers and payors who participate in the network, which shall be on a voluntary basis;

3. Making recommendations regarding the features and functions which shall be included in the distributed components of the network; and

4. Performing an outcomes assessment of the benefits achieved by the network;

(i) Identify and adopt standards for all computer systems communicating with the Ke-HN, including but not limited to:

1. The HIPAA standards for electronic transactions as the federal regulations become final, or more stringent standards for content and networking as determined by the board;

2. Medical lexicon for administrative billing and clinical purposes;

3. Procedure and billing codes; and

4. Prevalent health care industry standards for software and networking that ensure that applications work on all types of computer systems and equipment;

(j) Establish procedures to ensure that Ke-HN transactions are in compliance with HIPAA guidelines;

(k) Facilitate the implementation of the federal HIPAA guidelines, and identify any additional variables specific to Kentucky that are required to be in transactions within the HIPAA guidelines;

(l) Oversee the operations of the Ke-HN, including but not limited to making recommendations for financing the central interchange for the network and making recommendations to organizations about implementing the network in their respective organizations;

(m) Oversee the development of the central interchange that supports communication between components of the Medicaid management information system;

(n) Implement educational efforts about the Ke-HN;

(o) Develop incentives for providers and payors to use the Ke-HN;

(p) Identify options for, adopt, and implement approaches to various aspects of the Ke-HN necessary for its creation and operation, including but not limited to technology architecture, governance and oversight, development and implementation plans, and other areas identified by the board relating to its charge;

(q) Facilitate the development of private and public partnerships to build the Ke-HN;

(r) Assign priority in phasing in the network to geographical locations that are critical to homeland security and protection of the Commonwealth's energy production;

(s) Collaborate with federal agencies in the development and implementation of the Ke-HN as a demonstration model for the nation;

(t) Collaborate with the Kentucky Health Care Infrastructure Authority created under KRS 216.261;

(u) Assist with the securing of state, federal, or private funding for the Kentucky Health Care Infrastructure Authority created under KRS 216.261;

(v) Stimulate the development of state and local population health information capacities;

(w) Promulgate administrative regulations in accordance with KRS Chapter 13A necessary to carry out the responsibilities of the board;

(x) Receive and dispense funds appropriated for its use by the General Assembly or may solicit, apply for, and receive any funds, property, or services from any person, governmental agency, or organization to carry out its statutory responsibilities;

(y) Report to the Governor, secretary of the Cabinet for Health and Family Services, commissioner of the Department of Commercialization and Innovation, Legislative Research Commission, Interim Joint Committee on Health and Welfare, and Interim Joint Committee on Banking and Insurance annually on the development of the Ke-HN and the impact on quality and cost of health care; and

(z) Collaborate with the Telehealth Board to link functions of the Telehealth network to the Ke-HN, as determined by the Telehealth Board.

(3) The board may:

(a) Use any software program or expand any Medicaid management information system or electronic provider and payor network developed by the Medicaid program to support electronic health transactions between payors, insurers, health-care providers, and patients that are not Medicaid-related, unless prohibited by federal law or regulation;

(b) Contract, in accordance with KRS Chapter 45A, with an independent third party for any service necessary to carry out the responsibilities of the board subject to the appropriation of funds;

(c) Award grants to health-care providers and payors to implement projects related to health informatics, with highest priority given to health-care providers and payors that serve rural and inner-city areas of this

Commonwealth; and

(d) Enter into an agreement with the University of Kentucky or the University of Louisville to develop comparative business models or implement any phase of the Ke-HN, using private or federal funds received by the university for the purpose designated in the agreement.

(4) In its fully implemented form, the Kentucky e-Health Network is envisioned to support or encourage the following types of electronic transactions or activities that would be phased in over time:

(a) Automatic drug-drug interaction and allergy alerts;

(b) Automatic preventive medicine alerts;

(c) Electronic access to the results of laboratory, X-ray, or other diagnostic examinations;

(d) Disease management;

(e) Disease surveillance and reporting;

(f) Educational offerings for health-care providers;

(g) Health alert system and other applications related to homeland security;

(h) Links to drug formularies and cost information;

(i) Links to evidence-based medical practice;

(j) Links to patient educational materials;

(k) Medical record information transfer to other providers with the patient's consent;

(l) Physician order entry;

(m) Prescription drug tracking;

(n) Registries for vital statistics, cancer, case management, immunizations, and other public health registries;

(o) Registry of the existence and location of advance directives related to health care and mental health treatment;

(p) Registry of organ donations executed under KRS 311.165 to 311.235;

(q) Secured electronic consultations between providers and patients;

(r) A single-source insurance credentialing system for health care providers; and

(s) The following transactions covered by HIPAA:

1. Electronic health-care claims submission;

2. Electronic payment;

3. Coordination of benefits;

4. Health-care claim status;

5. Enrollment and disenrollment in a health plan;

6. Eligibility for a health plan;

7. Health plan premium payments;

8. Referral certification and authorization;

9. First report of injury; and

10. Health claims attachments.

Effective: July 12, 2006

History: Amended 2006 Ky. Acts ch. 210, sec. 13, effective July 12, 2006; and ch. 150, sec. 1, effective July 12, 2006. -- Created 2005 Ky. Acts ch. 30, sec. 4, effective March 8, 2005.

Legislative Research Commission Note (7/12/2006). This section was amended by 2006 Ky. Acts ch. 150 and 210, which do not appear to be in conflict and have been codified together.

Legislative Research Commission Note (6/20/2005). 2005 Ky. Acts chs. 11, 85, 95, 97, 98, 99, 123, and 181 instruct the Reviser of Statutes to correct statutory references to agencies and officers whose names have been changed in 2005 legislation confirming the reorganization of the executive branch. Such a correction has been made in this section.

**216.261 Kentucky Health Care Infrastructure Authority -- Responsibilities --
Funding -- Annual report.**

(1) The University of Kentucky and the University of Louisville shall jointly establish and operate a Kentucky Health Care Infrastructure Authority. The purposes of the authority are to improve the quality of health care and reduce the cost of health care.

(2) The responsibilities of the authority include but are not limited to:

(a) Providing leadership in the redesign of the health care delivery system using information technology to ensure that all Kentuckians receive care that is safe, effective, patient-centered, timely, efficient, and equitable;

(b) Serving as a forum for the exchange of ideas and consensus building regarding the advancement of health information infrastructure and health care applications;

(c) Conducting research to identify innovative health care applications using information technology and systems to improve patient care and reduce cost of care, including applications to support electronic disease management and evidence-based medicine;

(d) Implementing pilot projects to determine the impact of various health care applications using information technology and systems on the quality of patient care and the cost of health care;

(e) Facilitating the transfer of the authority's research findings into clinical practice;

(f) Facilitating the development of the Kentucky e-Health Network created under KRS 216.267;

(g) Supporting the development of the Kentucky e-Health Network created under KRS 216.267 as a framework for the national health information infrastructure;

(h) Facilitating the integration of the health information infrastructure with other information infrastructure development;

(i) Recommending policies and practices to ensure the security and confidentiality of health information;

(j) Providing recommendations on standards for software and communication among networks;

(k) Seeking funding from federal and private foundations for research, pilot projects conducted by the authority, development of health information capacity, and administrative and faculty expenses incurred by the authority;

(l) Collaborating with federal agencies and seeking funding for the implementation of pilot projects that can serve as models for the national electronic health information infrastructure;

(m) Serving as a national resource for health information science; and

(n) Providing educational programs and stimulating interest in health information science.

(3) The authority may receive state appropriations, gifts, grants, revolving funds, fees for services, federal funds, and any other public and private funds.

(4) The authority shall submit an annual report of its activities to the Governor, secretary of the Cabinet for Health and Family Services, Legislative Research Commission, Interim Joint Committee on Health and Welfare, and Interim Joint Committee on Banking and Insurance.

Effective: March 8, 2005
History: Created 2005 Ky. Acts ch. 30, sec. 1, effective March 8, 2005.
Legislative Research Commission Note (6/20/2005). 2005 Ky. Acts chs. 11, 85, 95, 97, 98, 99, and 181 instruct the Reviser of Statutes to correct statutory references to agencies and officers whose names have been changed in 2005 legislation confirming the reorganization of the executive branch. Such a correction has been made in this section.

216.263 Definitions.

As used in KRS 216.261 to 216.269:

(1) "Board" means the Kentucky e-Health Network Board;

(2) "Electronic health network" means a network that allows for secure exchange of needed information among authorized health care providers, third-party payors, and patients, with information being exchanged in real time when feasible;

(3) "Health care provider" has the same meaning as provided in KRS 311.621 and includes optometrists licensed under KRS Chapter 320;

(4) "HIPAA" means the Federal Health Insurance Portability and Accountability Act of 1996;

(5) "Insurer" has the same meaning as provided in KRS 304.17A-005; and

(6) "Ke-HN" means the Kentucky e-Health Network.

Effective: March 8, 2005
History: Created 2005 Ky. Acts ch. 30, sec. 2, effective March 8, 2005.

216.265 Kentucky e-Health Network Board -- Membership -- Terms -- Employees - - Immunity from liability -- Reimbursement of expenses -- Meetings --
Committees or subcommittees -- Reorganization.

(1) The Kentucky e-Health Network Board is created and is attached to the Cabinet for Health and Family Services for administrative and technical support purposes.

(2) The board shall consist of the following voting members:

(a) President, or a designee, of the University of Kentucky, who shall serve as cochair of the board;

(b) President, or a designee, of the University of Louisville, who shall serve as cochair of the board;

(c) Commissioner, or a designee, of the Department for Public Health;

(d) Commissioner, or a designee, of the Department for Medicaid Services;

(e) Executive director, or a designee, of the Commonwealth Office of Technology; and

(f) Nine (9) at-large members appointed by the Governor as follows:

1. One (1) member engaged in the business of large-scale e-strategy and computer information technology;

2. One (1) member engaged in the business of health insurance who is employed by a company that has its headquarters in Kentucky;

3. Two (2) members from a list of four (4) individuals recommended by the Kentucky Hospital Association, one (1) representing rural hospitals, and one (1) representing urban hospitals;

4. Two (2) physicians actively engaged in the practice of medicine in the Commonwealth from a list of four (4) physicians recommended by the Kentucky Medical Association, or self-nominated;

5. One (1) member from a company with at least one thousand (1,000) employees selected from a list of four (4) individuals submitted by the Associated Industries of Kentucky;

6. One (1) member with experience as a physician practice manager; and

7. One (1) member at large.

(3) The board shall consist of the following ex officio members who may vote, but shall not be counted toward a quorum:

(a) Commissioner, or a designee, of the Department of Commercialization and Innovation;

(b) President, or a designee, of the Council on Postsecondary Education;

(c) Secretary, or a designee, of the Cabinet for Health and Family Services;

(d) Executive director, or a designee, of the Office of Insurance;

(e) Two (2) members of the Senate who are members of the Interim Joint Committee on Health and Welfare or the Interim Joint Committee on Banking and Insurance, appointed by the President of the Senate; and

(f) Two (2) members of the House of Representatives who are members of the Interim Joint Committee on Health and Welfare or the Interim Joint Committee on Banking and Insurance, appointed by the Speaker of the House.

(4) Members of the board shall serve a term of four (4) years and may serve two (2) consecutive terms.

(5) At the end of a term, a member of the board shall continue to serve until a successor is appointed. A member who is appointed after a term has begun shall serve the rest of the term and until a successor is appointed. A member of the board who serves two (2) consecutive full four (4) year terms shall not be reappointed for four (4) years after completion of those terms. Members designated in subsection (2)(a) to (e) of this section and members designated in subsection (3) of this section shall serve on the board only while holding their respective titles.

(6) A majority of the full membership of the board shall constitute a quorum.

(7) The board may employ staff or contract with consultants necessary for the performance of the duties of the board, subject to the appropriation of funds.

(8) No member of the board shall be subject to any personal liability or accountability for any loss sustained or damage suffered on account of any action or inaction of the board.

(9) Members of the board and all committees, except the advisory group created in KRS 216.267(2), shall be entitled to reimbursement for actual and necessary expenses when carrying out official duties of the board in accordance with state administrative regulations relating to travel reimbursements. The board shall meet at least monthly.

(10) The board may appoint committees or subcommittees with the charge of investigating and making recommendations to the board on specific aspects of the Ke-HN, including but not limited to evidence-based clinical decision support, security of protected information, electronic data interchange, and clinical practice software packages, including the feasibility of developing a software purchasing alliance to decrease the cost of software and tax incentives to encourage members of the network to purchase software deemed by the board to meet the standards of KRS 216.267. The board may appoint the following committees:

(a) Clinical Decision Support Committee;

(b) Privacy and Security of Protected Health Information Committee;

(c) Electronic Data Interchange Committee; and

(d) Clinical Software Review Committee.

(11) The members of committees or subcommittees appointed by the board do not need to be members of the board. The chairs of committees or subcommittees shall be appointed by the board. The frequency of committee or subcommittee meetings shall be established by the board.

(12) The Clinical Decision Support Committee membership shall include at least the following members:

(a) One (1) physician with expertise in health informatics;

(b) Two (2) physicians actively engaged in the practice of medicine in this Commonwealth from a list of four (4) physicians recommended by the Kentucky Medical Association, or self-nominated;

(c) One (1) representative of a rural hospital and one (1) representative of an urban hospital;

(d) One (1) pharmacist;

(e) One (1) representative engaged in the business of health-care information technology;

(f) Two (2) members with experience as physician practice managers, one (1) from a single-physician practice and one (1) from a multiphysician practice; and

(g) One (1) member engaged in the business of health insurance who is recommended by the Kentucky Association of Health Plans, Incorporated.

(13) The Privacy and Security of Protected Health Information Committee shall include at least the following members:

(a) One (1) physician actively engaged in the practice of medicine in this Commonwealth;

(b) Two (2) members with expertise in HIPAA regulations;

(c) Two (2) members engaged in the business of large-scale e-strategy and computer information technology;

(d) One (1) member who serves as a computer information officer within the health-care industry;

(e) Two (2) members with experience as physician practice managers, one (1) from a single-physician practice and one (1) from a multiphysician practice;

(f) One (1) member engaged in the business of health insurance who is recommended by the Kentucky Association of Health Plans, Incorporated; and

(g) One (1) representative of a hospital.

(14) The Electronic Data Interchange Committee shall include at least the following members:

(a) Two (2) members engaged in the business of large-scale e-strategy and computer information technology;

(b) Two (2) members engaged in the business of health insurance who are recommended by the Kentucky Association of Health Plans, Incorporated;

(c) Chief information officer, or a designee, of the Office of Technology within the Cabinet for Health and Family Services;

(d) Two (2) members with experience as physician practice managers, one (1) from a single-physician practice and one (1) from a multiphysician practice; and

(e) One (1) representative of a hospital.

(15) The Clinical Software Review Committee shall include at least the following members:

(a) One (1) member from a company that develops computer software for physician practices;

(b) One (1) member engaged in the business of large-scale e-strategy and computer information technology;

(c) Three (3) physicians, with one (1) having experience in electronic information technology;

(d) Two (2) members with experience as physician practice managers, one (1) from a single-physician practice and one (1) from a multiphysician practice;

(e) One (1) member engaged in the business of health insurance who is recommended by the Kentucky Association of Health Plans, Incorporated or employed by a company which has its headquarters in Kentucky; and

(f) One (1) representative of a hospital.

(16) The Governor of the Commonwealth of Kentucky may reorganize the Kentucky e-Health Network Board to include the Kentucky Telehealth Board and to reorganize the Telehealth Board under the Cabinet for Health and Family Services. If the Governor deems it appropriate, the reorganization shall create a new Telehealth Committee of the Ke-HN board with the membership and responsibilities as described under KRS 11.550 and shall be subject to confirmation by the General Assembly under the requirements of KRS 12.028.

Effective: July 12, 2006

History: Amended 2006 Ky. Acts ch. 210, sec. 12, effective July 12, 2006. – Created 2005 Ky. Acts ch. 30, sec. 3, effective March 8, 2005.

Legislative Research Commission Note (6/20/2005). 2005 Ky. Acts chs. 11, 85, 95, 97, 98, 99, 123, and 181 instruct the Reviser of Statutes to correct statutory references to agencies and officers whose names have been changed in 2005 legislation confirming the reorganization of the executive branch. Such a correction has been made in this section.

Legislative Research Commission Note (3/8/2005). 2005 Ky. Acts ch. 30, sec. 7, provides that the "members of the Kentucky e-Health Network Board created in [KRS 216.265] shall be appointed upon the appropriation of federal or state funds or upon the availability of other funds to finance the administrative costs of the board."

Appendix C: Kentucky e-Health Network Board Mission and Vision Statement

MISSION: The Kentucky e-Health Network Board will champion the development of a secure, interoperable electronic health network with the goal of improving the quality and cost-effectiveness of health care and providing access to useful, timely and accurate health information.

To achieve its mission, the Board will provide leadership, make recommendations, and facilitate collaboration among providers, public and private health care organizations, public officials, employers, and citizens as they work to access and share critical health information securely. The Board will work to develop a model for a statewide health information exchange, drawing on the insight and expertise of outside stakeholders in its design and scope. As this solution is being developed, the Board will pursue intermediate steps and projects to build trust and experience between stakeholders while furthering the ultimate goal of health information exchange.

The vision for the Kentucky e-Health Network is to:

- Improve the quality of patient care and the public health of all Kentuckians
- Support clinician and caregiver decision making through health information technology and exchange
- Increase the safety and efficiency of Kentucky's health care system
- Lower costs and increase value for consumers and stakeholders
- Protect all citizens through enhanced research opportunities and public health capacity
- Enhance economic development opportunities within the Commonwealth through increased investment and job creation in health information technology, more competitive health care marketplace, and a healthier and more productive workforce.

The Board will pursue these goals by:

- Evaluating and recommending a model to support and facilitate statewide health information exchange
- Pursuing intermediate projects that offer near-term benefits to patients and stakeholders, leverage existing electronic health data, and build toward the statewide network
- Respecting regional differences and encouraging local innovation and collaboration in a way that does not preclude future information sharing between those regions
- Encouraging the adoption of health information technology by clinicians and other stakeholders across Kentucky
- Respecting the privacy of patients, practice patterns of clinicians, and business practices of other stakeholders
- Utilizing the research, resources, and recommendations of Kentucky's state universities coordinated by the University of Kentucky and the University of Louisville through the Healthcare Infrastructure Authority
- Working collaboratively to learn from and inform federal efforts to develop common e-health solutions and the National Health Information Network
- Identifying opportunities to further the goal of e-health while advancing Kentucky's economy and increasing our knowledge-based resources.

Appendix D: Kentucky Regional Health Information Organizations (RHIOs)

1. HealthBridge	Collaborative healthcare network serving the greater Cincinnati area in Indiana, Kentucky, and Ohio
2. LouHIE	■ Collaborative health information exchange network under development in the greater Louisville area ■ Coordinated by University of Louisville School of Public Health
3. Northeastern Kentucky RHIO	■ Collaborative health information network under development in the Northeastern Kentucky region ■ Coordinated by Morehead State University and St. Claire Regional Medical Center

Appendix E: Table of Other State e-Health Efforts

Health Information Technology (HIT) and E-health Background (12/12/05)

Federal HIT information

National Health Information Coordinator's Office: National Health Information Coordinator's Office: National Health Information Coordinator's Office: http://www.os.dhhs.gov/healthit/
Federal agency initiatives http://www.os.dhhs.gov/healthit/federalprojectlist.html#intitiativestable
AHRQ State and Regional Demonstrations in Health Information Technology - AHRQ awarded 5 State or State-based contracts totaling $25 million over 5 years to develop State-wide networks allowing major purchasers of health care, public and private payers, hospitals, ambulatory care facilities, home health care providers, and long-term care providers to use health IT to communicate and share information. The 5 States are Colorado, Indiana, Rhode Island, Tennessee, and Utah.

State	Name	Description
CA	Cal- RHIO	California initiative currently underway •Initiated by Health Technology Center (HealthTech) with support from California Health Care Foundation (450,000), also seeking contributions from other stakeholders ($5-8 million over next three years); Currently housed within Health Tech with planning underway to create separate 501(c)(3) First Year Goals –Encourage business, healthcare and policy leaders create private and public policy agendas—and make funding commitments-in support of rapid development and implementation of health information/data exchange –Facilitate creation of common governance, process, technology, and other elements needed to rune one or more "RHIOs" under auspices of non-profit state-wide umbrella organization –Initiate RHIO projects to demonstrate feasibility, utility, quality and financial benefits of information sharing –Help organizers of existing data exchange efforts work toward common goals and share information and learning. –Support safety net provider and underserved population participation in governance, financing and data exchange development priorities –Support legislation, if required, for successful implementation of an integrated state-wide health data network.
CO	The Colorado Health Information Exchange (COHIE)	This project involves four major health centers in the development of a technical prototype for statewide exchange. In addition, throughout the state, several local projects are underway to implement health information exchange among a variety of local providers, hospitals and agencies. Colorado is poised to leverage these current opportunities as one of five states awarded a $5 million grant from the Agency for Healthcare Research and Quality (AHRQ) to develop a regional health information network. AHRQ: Colorado Connecting Communities—Health Information Collaborative (C3-HIC) Description: Contract that implements State-wide information and communications technologies to enable clinicians to access patient information from other clinical data repositories at the point of care. Contracting Institution: University of Colorado Health Sciences Center, Aurora, CO

State	Name	Description
DE	Delaware Health Information Network	The Delaware Health Information Network (DHIN) is an public instrument of the state to advance the creation of a statewide health information and electronic data interchange network for public and private use. The Delaware initiative includes: A working group focused just on the needs of communities engaged in health information exchange. An annual "Connecting Communities Learning Forum". An annual survey of state, regional and community-based health information exchange initiatives, the most recent released in August 2005.
FL	Florida's Health Information Infrastructure	In May of 2004, Governor Bush issued Executive Order Number 04-93 (90Kb .pdf) creating the Governor's Health Information Infrastructure Advisory Board. The Board was established to advise the Agency for Health Care Administration (AHCA) as it develops and implements a strategy for the adoption and use of electronic health records. First Interim Report to Governor Jeb Bush (740Kb .pdf) Interium report to Governor discusses strategic frame work to promote adoption of electronic health record systems and Develop the Florida Health Information Network (FHIN) infrastructure.
GA	Office of Health Information Technology	2005 Legislation SB204: To amend the Official Code of Georgia, relating to health records, so as to provide that any provider may create, maintain, transmit, receive, and store records in an electronic format; to provide conditions; to provide for legal rights and responsibilities; to provide for tangible copies of records; to repeal conflicting laws; and for other purposes.
IN	Indiana Health Information Exchange	The Indiana Health Information Exchange (IHIE) is a newly launched, non-profit venture backed by a unique collaboration of Indiana health care institutions. Its vision is to use information technology and shared clinical information to Improve the quality, safety, and efficiency of healthcare in the state of Indiana. Indiana Health Information Exchange Inc. is building a set of IT services based on electronic medical record system. The Indianapolis-based IHIE is part of a consortium that was awarded a contract by the U.S. Department of Health and Human Services to develop a prototype for a national IT infrastructure for exchanging health information. Description from Computer World article: Since late last year, the exchange has been rolling out a clinical messaging service to provide its membership, which includes community physicians at 18 hospitals, with electronic access to pathology, laboratory, radiology and electrocardiogram reports. Two of the health care operators went live with the service in November 2004. A third went live this October, and the other two are expected to go live in December and January, officials said. So far, between 2,400 and 2,500 of the 3,000-plus doctors in the system are receiving reports from the clinical messaging service. AHRQ Grant: An Evolving State-wide Indiana Information Infrastructure Description: Contract that develops and implements HIE using an established technical infrastructure and interconnects local health information infrastructures; also implements a State-wide public health surveillance network that links all hospitals to share emergency department data. Contracting Institution: Indiana University School of Medicine, Indianapolis, IN

State	Name	Description
KS	Governor's Health Care Cost Containment Commission	Planning is underway for a health information infrastructure capable of accurately and efficiently recording and tracking all aspects of health care delivery and payment. Planning activities include: initial assessment of the current state of health information technology in Kansas, including an overview of key stakeholder views regarding the opportunities and challenges related to HIT and health information exchange and a high-level inventory of existing projects, an overview of the national landscape and principles and activities emerging from other state and regional projects, shared vision and set of goals and objectives, and a high-level set of recommendations for the development of health information exchange within Kansas.
KY	Kentucky e-Health Network	The Kentucky e-Health Network was created by legislation known as the "e-Health bill" (Senate Bill 2) passed by the 2005 General Assembly and signed into law by Governor Ernie Fletcher on May 8, 2005.
LA	Louisiana eHealth Initiative	The Louisiana eHealth Initiative – a not-for-profit organization, promoting the use of health information technology to improve healthcare quality in Louisiana – and the Louisiana chapter of the Health Information & Management Systems Society (HIMSS) are host organizations of this conference.
MA		■ The Massachusetts eHealth Collaborative was formed in 2004 as an initiative of the physician community to bring together the state's major health care stakeholders for the purpose of establishing an EHR system that would enhance the quality, efficiency and safety of care in Massachusetts. ■ Established in 1978, the Massachusetts Health Data Consortium, Inc. develops, collects, analyzes and disseminates information to improve the health and healthcare of the region. The Consortium brings together New England's key healthcare organizations for collaborative projects aimed at improving the healthcare environment. Massachusetts SHARE (Simplifying Healthcare Among Regional Entities) is a regional collaborative initiative operated by the Massachusetts Health Data Consortium. One project, MA-SHARE, seeks to promote the inter-organizational exchange of healthcare data using information technology, standards and administrative simplification, in order to make accurate clinical health information available wherever needed in an efficient, cost-effective and safe manner.
MI	Michigan Health Information Technology Commission	The State Health Information Technology Commission was created within the Michigan Department of Community Health to facilitate and promote the design, implementation, operation, and maintenance of an interoperable health care information infrastructure in Michigan.

State	Name	Description
MN	Minnesota e-Health Initiative	The goal of the Minnesota e-Health Initiative is to improve health care quality, increase patient safety, reduce health care costs, and improve public health by accelerating the use of Health Information Technology (HIT) in Minnesota. This initiative involves strengthening and expanding public and private stakeholder collaboration around HIT, identifying barriers to HIT and finding strategies to overcome the barriers. Steering Committee helps direct the state's efforts.
NC	North Carolina Healthcare Information and Communications Alliance	The North Carolina Healthcare Information and Communications Alliance, Inc. (NCHICA) is a nonprofit consortium of over 220 organizations dedicated to improving healthcare by accelerating the adoption of information technology. NCHICA was established by an executive order by Governor Jim Hunt in 1994. Programs include: Community Medication Management Project NC Health & Wellness Trust Fund Commission Medication Assistance Program North Carolina Emergency Department Database (NCEDD) Provider Access to Immunization Registry Securely (PAiRS) Patient Safety ICD Web Network for Providers and States
NH	New Hampshire Health Care Interconnec-tivity Project	The New Hampshire Health Care Interconnectivity Project's Health Information Exchange Strategy, will include recommended actions that will be achieved over the next two years, building upon the work conducted by four-five Working Groups and the Steering Committee and related staffing work to be conducted by University of New Hampshire - NH Health Information Center and the eHealth Initiative Foundation team, collaborating industry partners, and additional stakeholders from New Hampshire. The primary deliverables for this work are shared vision for health information exchange in New Hampshire, an assessment of the current HIT adoption and capabilities in the state by all stakeholders, identification of barriers and opportunities specific to New Hampshire, and an examination of the cost / benefit from HIE and potential sustainable model for HIE in New Hampshire.
NY	NYS HIT Working Group	The New York State Department of Health (NYSDOH) is also focusing on opportunities for HIT policy coordination. The NYS HIT Working Group has been established as a vehicle to communicate and coordinate across a wide variety of state agency components – Medicaid, public health, professional licensure, technology procurement, and capital financing, to name a few. And several funding opportunities that directly or indirectly relate to HIT are in process: ■ HEAL-NY funds were approved in the state's 2005 budget, and additional federal waiver funds may soon be available as well. ■ A request for proposal for disease management demonstration projects has been published, and the budget also established a new "pay for performance" demonstration program.
OH	Health Policy Institute of Ohio Statewide HIE	

State	Name	Description
OR		SB541: Creates Task Force on Electronic Medical Records. Directs task force to study and make recommendations for standards for transfer and exchange of electronic medical records and health-related data. Sunsets task force on date of convening of next regular biennial legislative session.
RI	Rhode Island Quality Initiative	The Institute's areas of concentrations include Safety in Care Delivery, Technology Infrastructure and Knowledge-Based Care (Matching Care to Science). RI legislation on ehealth. Research shows that the application of information technology such as electronic medical records, computer-based physician order entry and electronic data interchange, has significant potential for improving healthcare quality and safety and obtaining efficiencies in the healthcare delivery system. AHRQ Grant: State and Regional Demonstrations in Health Information Technology Description: Contract that plans, develops, implements, and evaluates a Master Patient Index to facilitate interoperability and sharing patient data between public and private health care sectors. Contracting Institution: State of Rhode Island, Providence, RI
TN	Tennessee eHealth Advisory Council	On July 9th 2004, Governor Phil Bredesen announced in Memphis a technology pilot project to improve the delivery of healthcare in Southwest Tennessee and help lay the groundwork for better care statewide. The Volunteer eHealth Initiative will begin by providing a framework for hospitals, physicians, clinics, health plans and other healthcare stakeholders in Shelby, Fayette, and Tipton counties to work together to establish regional data sharing agreements. Although TennCare is a catalyst for this work, the effort is designed to improve the health care of all Tennesseans. The Volunteer eHealth Initiative will be managed by the State of Tennessee in partnership with Vanderbilt University Medical Center.
VT	Vermont Information Technology Leaders ("VITL")	The Vermont Information Technology Leaders (a.k.a. VITL) is a multi-stakeholder corporation formed by the Vermont Association of Hospitals and Health Systems (VAHHS) and a broad base of providers, payors, employers, patients, state agencies, information technology vendors and other business leaders. The group has created a health information technology strategy for Vermont in collaboration with the federal Office of the National Coordinator for Health Information Technology (ONCHIT) and the eHealth Initiative. The VITL organization is working to implement health information infrastructure for data sharing. VITL's efforts facilitate communication among Vermont's health information technology experts and lay the foundation for further HIT collaboration.

State	Name	Description
UT	Utah Health Information Network	The Utah Health Information Network (UHIN) is a broad-based coalition of health care insurers, providers, and other interested parties, including State government. UHIN operates as a centralized, secure network (private post office) through which health care transactions pass in Utah. Providers can submit electronic claims to all UHIN payers using a single standardized format. In return UHIN payers respond with a standardized electronic remittance advice. AHRQ Grant: Improving Communication Between Health Care Providers Via a State-wide Infrastructure: UHINClinical Description: Contract that expands and enhances current State-wide network for the electronic exchange of patient administrative and clinical data and will support the adoption of EMRs. Contracting Institution: Utah Health Information Network, Murray, UT
WI	Wisconsin Health Information Exchange	The mission of WHIE is to provide a system where diverse stakeholders collaborate to enable secure, confidential exchange of health information between authorized users. The WHIE system is supported by federal directives to establish an interoperable national health information infrastructure. Southeast Wisconsin was one of nine recipients of funding from the national Connecting Communities for Better Health program to develop production systems and establish best practices that can then be shared across the state and country. Recent WHIE activities include: network integration work with the Wisconsin Health Alert Network, Wisconsin Immunization Registry and EMSystem; applications to various potential funding partners in collaboration with other RHIOs across the country; and further business plan development.
WA	Washington State Health Information Technology and Electronic Medical Records Initiative	Washington State implemented a Health Information Technology and Electronic Medical Records Initiative (HIT & EMR Project). Substitute Senate Bill (SSB) 5064 was passed by the Legislature and signed by Governor Gregoire during the 2005 Legislative session. The bill requires the development of a strategy for the adoption and use of electronic medical records and health information technologies that are consistent with emerging national standards and that promote interoperability of health information systems. The Washington State Health Care Authority (HCA) is working with a health information infrastructure advisory board (referred to as the HIIAB, or "the Board") that is created in the bill to help develop that strategy.

Appendix F: e-Health Glossary and Acronym Guide

AHIC- American Health Information Community- Federally-chartered organization working to create the NHIN.

CCHIT- Certification Commission for Health Information Technology- CCHIT establishes interoperability standards for EHR software

EHR- Electronic Health Record- Electronic patient records software

ePPIK- ePrescribing Partnerships in Kentucky- A grant program that encourages adoption of electronic end-to-end prescription processing

FHIN- Florida Health Information Network- statewide entity to facilitate HIE

HHS- United States Department of Health and Human Services- Executive Agency that oversees federal health initiatives and programs

HIE- Health Information Exchange- Electronic exchange of health information from one entity to another

HISPC- Health Information Security and Privacy Collaboration- Federally-funded study to identify and address barriers to HIE

HIT - Health Information Technology- Software that facilitates HIE

HITSP- Health Information Technology Standards Panel- A public and private sector partnership created to develop relevant and widely-accepted standards to facilitate interoperability among health IT software products

IHIE- Indiana Health Information Exchange- Network for sharing patient information between hospitals in central Indiana

Interoperability- the ability of two or more systems to exchange information, and to use the information that has been exchanged

INPC- Indiana Network for Patient Care- Early (1993) HIE network in Indianapolis

KEHN- Kentucky e-Health Network - Statewide e-Health Network Authorized by Senate Bill 2

KHIA- Kentucky Healthcare Information Authority- A partnership between the University of Kentucky and the University of Louisville established by Senate Bill 2 to improve the cost and quality of health care in the Commonwealth through research, recommendations, education, pilot projects, grant initiatives, and support of the KeHNB's efforts

K-HIP- Kentucky Health Information Partnership- Public and private partnership in Kentucky to make a claims-based patient health summary available to physicians

NHIN- National Health Information Network- Envisioned national network for HIE

ONC- Office for the National Coordinator for Health Information Technology- Federal entity overseeing national HIE efforts

RHIO- Regional Health Information Organization- A nongovernmental, multi-stakeholder organization that enables or oversees the business and legal issues involved in the exchange and use of health information, in a secure manner, for the purpose of promoting the improvement of health quality, safety and efficiency.

ROI- Return on Investment

SB2- Senate Bill 2 (2005)- Legislation that authorizes the KeHNB and calls for the creation of a statewide e-Health Network

Cabinet for Health and Family Services
Kentucky e-Health Network Board
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Frankfort, KY 40621
http://ehealth.ky.gov